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UNITED STATES DEPARTMENT of AGRICULTURE

**INVENTORY**

of

**POTENTIAL and EXISTING**

**UPSTREAM RESERVOIR SITES**

**SUDBURY, ASSABET & CONCORD STUDY AREAS**



U.S. DEPARTMENT of AGRICULTURE  
Soil Conservation Service  
Economic Research Service  
Forest Service

In cooperation with the

**MASSACHUSETTS WATER RESOURCES COMMISSION**

OCTOBER 1976

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INVENTORY  
OF  
POTENTIAL AND EXISTING  
UPSTREAM RESERVOIR SITES

ASSABET, CONCORD, AND SUDBURY  
STUDY AREAS

Prepared by

U.S. DEPARTMENT OF AGRICULTURE  
Soil Conservation Service  
Amherst, Massachusetts

In cooperation with the  
Massachusetts Water Resources Commission

U.S. DEPT. OF AGRICULTURE  
NATIONAL SERVICE CENTER

JUN 8 - 1988

MASSACHUSETTS

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INVENTORY OF  
POTENTIAL AND EXISTING UPSTREAM RESERVOIR SITES  
in the  
ASSABET, CONCORD, AND SUDBURY STUDY AREAS

prepared by the  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

in cooperation with the  
MASSACHUSETTS WATER RESOURCES COMMISSION

INTRODUCTION

This report presents data on 25 potential and 81 existing reservoirs in the Assabet, Concord, and Sudbury Study Areas in Middlesex and Worcester counties in Massachusetts.

Many of the potential reservoirs could be developed as municipal water supplies, recreation lakes, fish and wildlife areas, or floodwater retarding structures. The inventory can be used by the state, municipalities, planning boards, conservation commissions, other units of government, and private individuals in determining the best use for the limited number of potential reservoir sites in the Study Areas.

DESCRIPTION OF STUDY AREAS

The Assabet Study Area is located in Middlesex and Worcester counties in east-central Massachusetts. The main streams in the Study Area include the Assabet River, Elizabeth Brook, Nashoba Brook, and North Brook. The Study Area covers about 111,200 acres or 174 square miles. All or portion of twenty cities and towns are located within the Study Area.

The Concord Study Area is located in Middlesex County. The main streams in the Study Area include the Concord River, Mill Brook in Billerica, Pages Brook, and Mill Brook in Concord. The Study Area covers about 25,000 acres or 39 square miles. All or portions of eight cities and towns are located within the Concord Study Area.

The Sudbury Study Area is located in Middlesex and Worcester Counties. The main streams in the Sudbury Area include the Sudbury River, Cold Spring Brook, Hop Brook, Indian Brook, Picadilly Brook, and Whitehall Brook. The Study Area, which covers 104,800 acres or 164 square miles is divided into two subwatersheds. All or portions of eighteen cities and towns are located within the Study Area.



## CRITERIA

### Potential Reservoir Sites

The primary considerations used to identify potential reservoir sites were: suitable topography for a dam and reservoir, sufficient drainage area to maintain the proposed reservoir and a relatively undeveloped reservoir area.

The following criteria were used as a guide in site selections:

1. Drainage area -- larger than one-half square mile, but not greater than 50 square miles.
2. Ratio of drainage area to beneficial pool area--not less than 10 to 1.
3. Minimum beneficial pool depth--7 feet at the dam.
4. Minimum beneficial pool area--10 acres.
5. Minimum beneficial pool capacity--100 acre-feet.
6. Maximum beneficial pool capacity--storage volume equal to 25 inches of runoff from the drainage area.
7. Maximum height of dam-100 feet.
8. Pool area relatively undevelop--no housing developments, industrial areas, or major highways inundated.

### Existing Reservoirs

Existing reservoirs were located using the 7½ minute U.S. Geological Survey (USGS) quadrangle sheets that cover the Study Area. Two criteria were used to determine sites to be included in this report:

1. Surface area--at least 10 surface acres or a pond identified by name on the USGS topographic map.
2. Man-made dam--The pool must be the result of dam construction. Natural ponds and beaver dams are excluded.

Some dams along the main stem of the Assabet, Concord, and Sudbury Rivers are not included in this inventory. The primary function of the dams is to provide a head differential for manufacturing use and not to provide water storage or increased surface areas.



## INVESTIGATIONS AND ANALYSES

### Potential Reservoir Sites

Sites were located using the latest available USGS 7½ minute quadrangle sheets. Natural basins, or topography favorable for storage of water, and an undeveloped pool area were the primary considerations in the initial site selection. Watershed boundaries were delineated on the quadrangle sheets and the drainage area was determined for each site. Water storage areas and volumes available upstream of the site center-line were calculated. Data were also obtained to calculate the volume of earthfill required for the dam and any supplementary dikes that might be needed to maintain a reservoir.

At each site a field reconnaissance was made that included an inventory of land and facilities (man-made structures) that would be affected if a dam and reservoir were developed at the site. If it was determined that the reservoir would flood extensive man-made facilities, or a study of the elevation-area storage data showed that the site did not meet criteria for the study, the site was dropped from further consideration.

A surficial geologic investigation was made of each potential site to determine any obvious geologic conditions that might affect the waterholding capability or require extensive foundation preparation. A preliminary geological report was prepared which outline the types of materials that might be expected at the site and their effect on construction costs and waterholding capabilities for the site. The report of geologic conditions was based on the geologist's interpretation following the surficial investigation of the site and surrounding area. No borings were made and subsurface conditions may vary from those indicated in this report.

Hydrologic and hydraulic data were calculated using methods developed by the Soil Conservation Service. Rainfall data were obtained from Technical Papers 40 and 49, U.S. Department of Commerce, Weather Bureau. Preliminary structure site analyses for several levels of development for each site were processed by computer, using a program which determines the most economical type of principal spillway; determines the runoff and peak flow for the 100-year frequency, 10-day duration, principal spillway design storm; routes the design storm to set the emergency spillway crest; performs other routings to determine the design high water and top of dam elevations; calculates embankment yardage and other construction quantities; determines the total estimated cost of the reservoir; and calculates "safe yield" for water supply purposes.

## Existing Reservoirs

An inventory was made of 81 existing reservoirs. An engineer made a field reconnaissance to determine the physical condition of each structure and to assess the potential for expansion of the reservoir. While at the site, photographs were taken and are included in this report. Ownership and use information for the reservoirs was obtained from records of the Massachusetts Department of Public Works, the Massachusetts Water Resources Commission and from local interviews.

## COSTS

Preliminary cost estimates for potential reservoir sites were based on construction costs and land values as of 1975. The cost estimates include: (1) construction costs; (2) contingencies; (3) engineering and administrative services necessary for surveys, geology, final design, and construction inspection; (4) cost for land required for the reservoir and construction of the dam and spillway; and (5) costs associated with purchase or relocation of man-made facilities affected by the constructed reservoir.

Construction costs were based on recent dam construction contract costs in Massachusetts. A factor for contingencies, equal to 15% to 35% of the construction cost, was included to account for items that were not considered at this intensity of study. Engineering and administrative services ranged from 20% and 40% of the construction costs.

Costs for land acquisition were based on an evaluation of current real estate transactions and market conditions. Land with potential for development was valued at from \$5,000 to \$25,000 per acre; land with little development potential was valued at from \$1,000 to \$2,500 per acre. Land values also varied from site to site based on the proximity to developed areas and highways, development taking place in the area, and suitability for development. Land needed for the dam, spillway and designed high water pool was included in the land acquisition cost.

Cost estimates are presented on the basis of a cost per acre-foot of storage and cost per surface-acre to provide a comparison between different sites and different levels of development at the same site. Costs are preliminary estimates; firm cost estimates for any site can be determined only after completion of detailed geologic and engineering investigations, final structural designs and land appraisals.

No cost estimates are included for existing reservoirs.

## REPORT FORMAT

The report is divided into sections based on the individual Study Areas. The location map, placed after the Table of Contents, outlines the area covered by each section.

Each subwatershed section provides Site Data for the potential and existing reservoir sites, located with the subwatershed, which are included in this report.

A Municipal Index has been prepared to enable local residents to more easily locate sites within their town. The Municipal Index of Sites lists the site identification numbers for potential and existing reservoir sites within each municipality and the page number of this report on which data are recorded.

### Potential Reservoir Sites

Data for potential reservoirs are presented in the following format:

Location:	includes a narrative description of the location of the site by reference to nearby roads, railroads, or other physical landmarks. In addition, the latitude, longitude, and USGS quadrangle sheet name are provided for more accurate location.
Facilities Affected:	describes any man-made facilities that would be flooded by a reservoir at the potential site. The elevation of existing facilities was estimated during the engineer's field reconnaissance with the aid of the USGS quadrangle sheets.
Geologic Conditions:	provides a summary of the preliminary geologic report. The material in the abutments (the valley sides) and the foundation (the valley floor) is described. An estimate is made of the depth and probable type of bedrock. The availability of fill material for dam construction is noted.  possible leakage problems are indicated and the waterholding capability of the site is subjectively described as "good," "fair," or "poor." The waterholding capability statement is based on the geologist's interpretation of the surficial conditons observed during the field reconnaissance.
Engineering Notes:	provides information which should be helpful in preliminary design of a dam. One of the abutments is recommended as the location for an excavated emergency spillway. If an excavated emergency spillway is unable to carry the required flows at safe velocity, the need for a concrete emergency spillway is noted.



Public indicates that some portion of a reservoir site is  
Ownership: located on land owned by a governmental or quasi-  
public unit.

Sites which meet study criteria have been analyzed using a computer program which develops preliminary structure site analyses for several levels of development. Results of the computer program are presented in the tables entitled, "Summary Data for Potential Upstream Reservoir Sites" at the end of each subwatershed section. Two information lines contain data on site drainage area, USGS quadrangle name on which the site is located, latitude and longitude of the site, site rating, stream water quality, and principal spillway design storm runoff and peak flow. The site rating is based on geologic conditions and the expected waterholding capability. Sites are given one of the following ratings:

1. Suited for deep permanent storage (over 10 feet in depth).
2. Best suited for shallow water storage (3 to 5 feet maximum depth).
3. Best suited for temporary storage (e.g., floodwater and sediment storage).

In order to furnish the most data for potential reservoir sites, each site was considered to be suitable for deep permanent storage (rating "1") for purposes of design and analyses. The rating for any site could change based on detailed geologic investigations.

Stream water quality ratings are based on classifications assigned by the Division of Water Pollution Control, Massachusetts Water Resources Commission, and published in "Water Quality Standard," June 1967, and are as follows:

- "Class A -- Waters designated for use as public water supply in accordance with Chapter 111 of the General Laws. Character uniformly excellent.
- Class B -- Suitable for bathing and recreational purpose including water contact sports. Acceptable for public water supply with appropriate treatment.  
Suitable for agricultural, and certain industrial cooling and process uses; excellent fish and wildlife habitat; excellent aesthetic value.
- Class C -- Suitable for recreational boating; habitat for wildlife and common food and game fishes indigenous to the region; certain industrial cooling and process uses; under some conditions acceptable for public water supply with appropriate treatment. Suitable for irrigation of crops used for consumption after cooking. Good aesthetic value.
- Class D -- Suitable for aesthetic enjoyment, power, navigation, and certain industrial cooling and process uses. Class "D" waters will be assigned only where a higher water use class cannot be attained after all appropriate waste treatment methods are utilized."

The Summary Data for Potential Upstream Reservoir Sites tables also contain data for as many as six possible levels of development at each site. Elevations of the beneficial pool, emergency spillway crest, design high water, and top of dam are shown along with pertinent storage volumes, surface areas and depths. Total cost expressed in dollars per acre-foot of storage and dollars per surface-acre are provided to aid in comparison of levels of development. The emergency spillway type which was used in the preliminary design is indicated by an emergency spillway type code explained in the table notes.

These tables are photo-reductions of the computer output sheets. Elevations are shown to the tenth of a foot and costs to the nearest \$10, but are not to be considered that accurate because of the limited investigations made with preliminary data. All the Summary Data Tables are based on preliminary reconnaissance-type investigations and computer-produced structure designs. Additional detailed engineering, geologic and design investigations must be made before final site selection, land acquisition and final design would be practical.

Estimated safe yields for each potential reservoir are also shown on the tables and were based on information extrapolated from data developed by the late Professor G. R. Higgins of the University of Massachusetts. These estimated safe yields are based on a 95% chance, or the minimum yield that could be expected 19 years out of 20 -- taking into consideration reservoir storage-volume and expected runoff. These data do not consider evaporation, seepage, or prior upstream commitments.

The Committee on Rainfall and Yield of Drainage Areas of the New England Water Works Association has recommended a figure of 600,000 gallons per day per square mile as a maximum economically feasible safe yield. Data for some of the potential sites in this report show a safe yield above 600,000 gallons per square mile per day. These higher values are useful to define the upper portion of a discharge-storage curve for preliminary analysis. For detailed evaluation of a potential site or water supply purposes, the recommendation of the New England Water Works Association should be considered.

### Existing Reservoirs

Data for existing reservoirs are presented in the following format:

Location: of the dam is indicated by reference to nearby roads, railroads, or other physical landmarks. The appropriate USGS quadrangle sheet, latitude and longitude are provided for more accurate location.

Physical data (reservoir area, surface area, height of dam, and drainage area) were estimated from the quadrangle sheet and by field reconnaissance.

Potential  
for

Expansion: is estimated and any major man-made facilities which would be affected by an enlarged reservoir are noted. In some instances, the drainage area of the reservoir does not meet the criteria requiring a 10 to 1 drainage area to reservoir area-ratio, below which there may be relatively high evaporation losses. An increase in reservoir surface area might increase evaporation losses to a point where the reservoir could not be maintained during the summer months. These situations are indicated by the statement, "The small drainage area limits expansion potential."

Remarks: includes a description of the dam and spillway system. Construction materials, spillway type and size, and condition of the structure are noted.

Ownership  
and

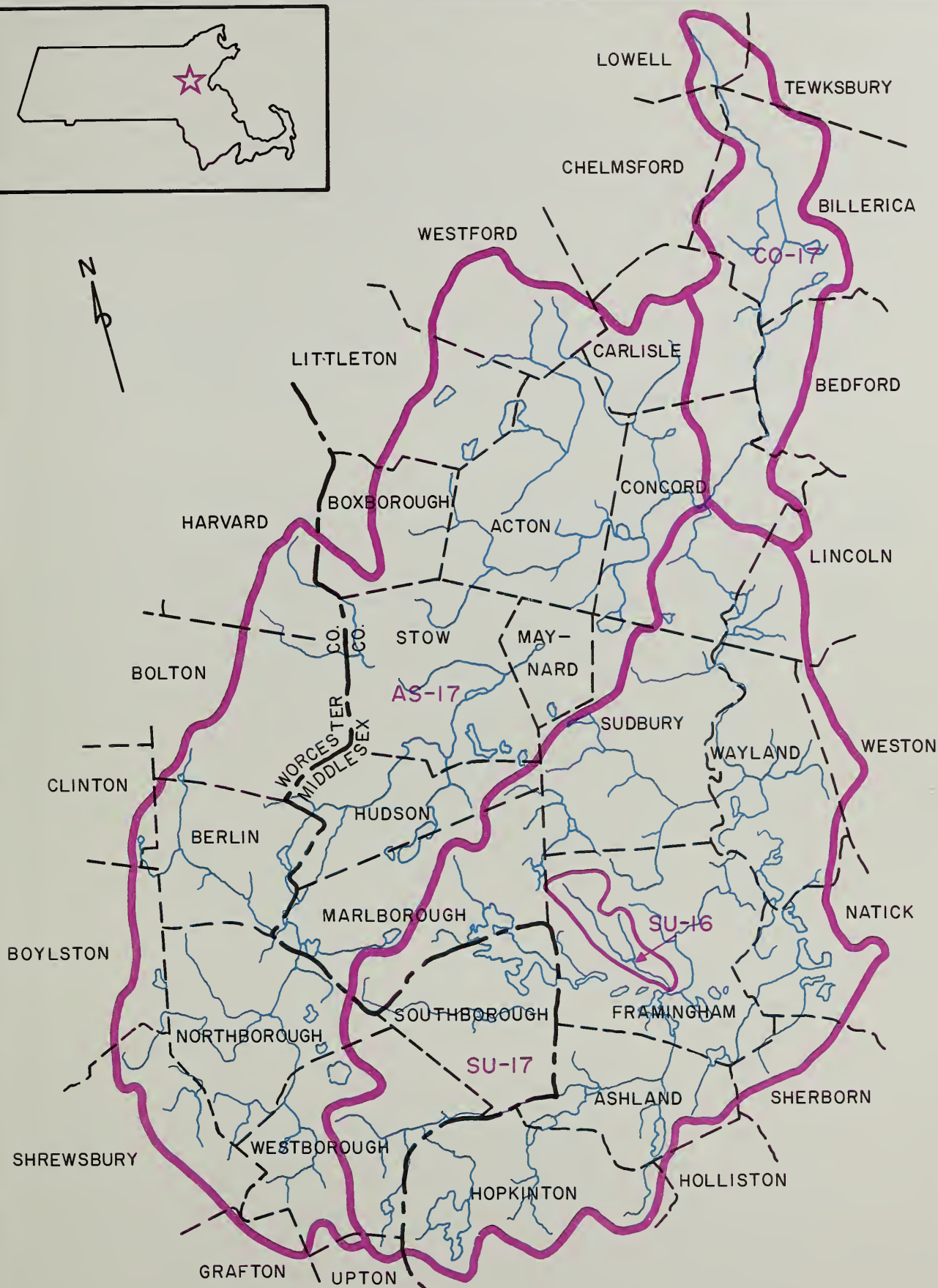
Use: is indicated, if available. In some cases, the reservoir is not maintained for a specific purpose, but may have incidental use for recreation. This is probably the situation for existing reservoirs which are indicated in the Massachusetts Department of Public Works records as being used to "store water." Typical of these sites are old mill reservoirs which are no longer utilized for mill power.

Selected photographs of existing dams, spillways, and reservoirs are included in the report.

### MAPS

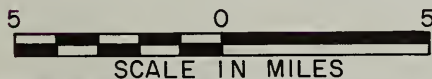
Individual subwatershed maps appearing at the end of each section indicate the location of the potential and existing reservoir sites in that subwatershed. The maps are reductions of mosaics prepared from 7½ minute USGS quadrangle sheet (1" = 2000' scale). Potential sites are indicated with a red rectangle surrounding the site number. Existing reservoirs are identified by a red circle surrounding the site number.





**LEGEND**

 STUDY AREA BOUNDARY



LOCATION OF SUB-WATERSHEDS  
SUDBURY, ASSABET, & CONCORD  
STUDY AREAS  
MASSACHUSETTS



ASSABET STUDY AREA  
SITE DATA FOR

Subwatershed AS-17, Assabet River

This subwatershed covers about 111,200 acres in Acton, Berlin, Bolton, Boxborough, Boylston, Carlisle, Clinton, Concord, Grafton, Harvard, Hudson, Littleton, Marlborough, Maynard, Northborough, Shrewsbury, Stow, Sudbury, Westborough, and Westford in Middlesex and Worcester Counties.

The main stream in the subwatershed is the Assabet River which originates in Westborough and flows northeasterly through Northborough, Marlborough, Berlin, Hudson, Stow, Maynard, and Acton to Concord where it joins the Sudbury River to form the Concord River. Elevations in the subwatershed range from about 750 feet (msl) in Shrewsbury to about 120 feet near the confluence with the Sudbury River in Concord.

Fourteen potential reservoir sites and 44 existing reservoirs were studied.

POTENTIAL SITE AS-1701

Location: On an unnamed tributary to the Assabet River about 500 feet upstream from Nourse Street in Westborough, Massachusetts. Three-quarters of the potential pool area is located in Grafton, Massachusetts.

Grafton, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Jasper Street	405

Geologic Conditions: The right abutment is poorly graded fine sand (outwash). The left abutment is silty sand with gravel, cobbles, and boulders. Surficial deposits are outwash sand and silty sand (englacial drift). Depth to schist bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be fair. Slight leakage is expected through the right abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1702

Location: On Dakins Brook about 800 feet upstream from Barnes Hill Road in Concord, Massachusetts.

Concord, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Eastbrook Road	135
	House	150

Geologic Conditions: Both abutments are silty sand and gravel with cobbles and boulders (englacial drift). There may be areas of thin outwash on the right abutment. Surficial material is swamp deposits and englacial drift. Depth to schist bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be good if a cutoff is made on the abutments. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended for the excavated emergency spillway location.

\*\*\*\*\*



POTENTIAL SITE AS-1703

Location: On Second Division Brook about 2800 feet upstream from Harrington Avenue in Concord, Massachusetts.

Maynard, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Powder Mill Road	145
	Clubhouse & facilities	155
	House	170
	2 houses	175

Geologic Conditions: Both abutments are medium to fine sand (outwash). Surficial material is swamp deposits and outwash sand. Depth to schist bedrock in the foundation is estimated to be from 50 to 60 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Leakage is occurring under the small dam presently at the site. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location. See Existing Site AS-1703 (Muskequid Sportsman's Pond) for description of the existing pond at this site.

\*\*\*\*\*

POTENTIAL SITE AS-1704

Location: On a small unnamed tributary to the Assabet River about 400 feet upstream from Glen Street in Westborough, Massachusetts. One-half of the potential pool area is in Grafton, Massachusetts.

Grafton, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Glen St. & utilities	395

Geologic Conditions: The left abutment is outwash sand or gravel. The right abutment is silty sand with gravel, cobbles, and boulders (englacial drift). Bedrock may be at shallow depth on the right abutment. Surficial materials are outwash sand and gravel and englacial drift. Depth to schist bedrock in the foundation is estimated to be from 25 to 30 feet. Waterholding capabilities appear to be fair. Leakage is expected through the left abutment. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1707

Location: On Hop Brook about 4900 feet upstream from Route 20 in Northborough, Massachusetts. One-half of the potential pool area is in Shrewsbury, Massachusetts.

Shrewsbury, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Sewage Disposal Plant	335
	Main Street	355
	Spring Street	360
	House	395
	Garage	395
	Barn	395
	House	400

Geologic Conditions: Both abutments are bedrock with thin discontinuous areas of silty sand with gravel, cobbles, and boulders (glacial till). Surficial materials are swamp deposits, glacial till, and gneiss bedrock. Depth to gneiss bedrock in the foundation is estimated to be from 5 to 10 feet. Bedrock outcrops in the brook about 300 feet downstream from the site. Waterholding capabilities appear to be good. Borrow material for dam construction was not located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1710

Location: On Wrack Meadow Brook about 3400 feet upstream from Linden Street in Boylston, Massachusetts.

Shrewsbury, Massachusetts USGS quadrangle

Facilities  
Affected: None below elevation 480

Geologic Conditions: The left abutment is bedrock and swamp deposits with some silty sand (englacial drift). The right abutment is silty sand with gravel, cobbles, and boulders (englacial drift). Surficial materials are swamp deposits, gneiss bedrock, and englacial drift. Depth to gneiss bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*



POTENTIAL SITE AS-1712

Location: On Howard Brook about 1300 feet upstream from Route 290 in Northborough, Massachusetts.

Shrewsbury, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Green Street	365
	Garage	370
	House & shed	375
	House	380
	House	385

Geologic Conditions: Both abutments are thin silty sand with gravel, cobbles, and boulders (englacial drift) with many outcrops of gneiss bedrock. Surficial materials are swamp deposits, silty sand and gravel, and gneiss bedrock. Depth to gneiss bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be good provided a cutoff through the foundation can be made. Borrow material for dam construction was not located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1715

Location: On North Brook about 400 feet upstream from Sawyer Road in Bolton, Massachusetts.

Clinton, Massachusetts USGS quadrangle

Facilities  
Affected: None below elevation 460

Geologic Conditions: Both abutments are thin silty sand with cobbles and boulders (englacial drift). Bedrock is shallow on both abutments. Surficial materials are englacial drift and granitic bedrock. Depth to granitic bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1716

Location: On Danforth Brook about 1600 feet upstream from Lincoln Street (Route 85) in Hudson, Massachusetts. The majority of the potential pool area is in the town of Bolton.

Hudson, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected	Route 85	300
	Mill Road	310
	House & barn	310
	Spectacle Hill Road	315
	4 houses	315
	Shed & garage	315
	3 houses	320
	Barn	320

Geologic Conditions: Both abutments are thin discontinuous deposits of silty sand with gravel, cobbles, and boulders underlain by gneiss bedrock. Surficial materials are englacial drift and gneiss bedrock. Bedrock outcrops in the brook at the site. Waterholding capabilities appear to be good. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1717

Location: On Heath Hen Meadow Brook about 1100 feet downstream from Boxboro Road in Stow, Massachusetts.

Hudson, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Airport	260
	Boxboro Road	265
	House & shed	265

Geologic Conditions: Both abutments are schist bedrock. Bedrock outcrops in the brook. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1718

Location: On an unnamed tributary to Heath Hen Meadow Brook about 2200 feet southeast of the Flag Hill Road - Boxboro Road intersection in Stow, Massachusetts.

Hudson, Massachusetts USGS quadrangle

## Facilities

Affected: None below elevation 285

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (englacial drift). Surficial materials are swamp deposits and englacial drift. Depth to schist bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1720

Location: On an unnamed tributary to Vine Brook about 1300 feet upstream from Route 495 in Westford, Massachusetts.

Westford, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Power lines	290

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders (glacial till). There may be some sand and gravel near the toe of slopes. Surficial materials are swamp deposits, sand and gravel (glacial till), and possibly bedrock near the brook. Depth to gneiss bedrock in the foundation is estimated to be from 10 to 15 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1723

Location: On North Branch Brook at Otis Street in Marlborough, Massachusetts.

Marlborough, Massachusetts USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Bigelow Road	280
	9 houses	285
	7 houses	290

Geologic Conditions: The left abutment is sand and gravel (ice-contact deposits). The ridge between the brooks is sand and gravel (outwash). The right abutment is sand and gravel at the toe with bedrock outcrops higher on the abutment. Surficial materials are swamp deposits, outwash sand and gravel, englacial drift, and schist bedrock. Depth to schist bedrock in the foundation is estimated to be from 10 to 20 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*

POTENTIAL SITE AS-1724

Location: On Stirrup Brook about 3800 feet upstream from East Main Street (Route 20) in Northborough, Massachusetts.

Marlborough, Massachusetts USGS quadrangle

Facilities  
Affected: None below elevation 270

Geologic Conditions: Both abutments are outwash sand and gravel with cobbles and boulders. Surficial materials are swamp deposits and outwash sand and gravel. Depth to schist or gneiss bedrock in the foundation is estimated to be from 25 to 35 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and possibly through the foundation. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

\*\*\*\*\*



## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-ASSABET										SUBWATERSHED-ASSABET									
BENEFICIAL POOL										EMERGENCY SPILLWAY									
ELEV	STORAGE	COST PER AC FT	AREA	SURF AC	COST/ SURF AC	DEPTH AT	CREST ELEV	STORAGE AT CREST	CCST PER AC FT	DESIGN HIGH WATER	DAM	SAFE YIELD	FILL PERCENT	CHANCE	AT 95	PERCENT	CHANCE	AT 95	
(MSL)	AC FT	IN	(\$)	(AC)	(\$)	(FT)	(MSL)	AC FT	IN	(MSL)	(AC)	(MSL)	(AC)	(MSL)	FT	(1000 CY)	HGT	VOL	
DA= 0.60 SQ MI = 384 AC										LATITUDE 42-14-56 LONGITUDE 71-39-10									
STREAM WATER QUALITY (B)										RUNOFF = 7.20 IN, PEAK FLOW = 247 CFS									
SITE RATING (1)										SITE RATING (1)									
386.4	0	0.0	2	23	27930	14.7	397.7	E	133	4.1	4000	36	401.2	36	405.1	23	22	22	
396.7	100	3.0	6350	23	27930	14.7	399.2	E	170	5.3	3730	41	403.0	41	406.7	25	26	26	
400.7	217	6.8	3460	34	21760	18.7	403.2	E	317	9.8	2370	51	406.2	51	409.7	28	37	37	
406.2	450	14.1	2080	51	18480	24.2	408.7	E	589	18.4	1580	63	410.7	63	414.0	32	56	56	
410.4	683	21.4	1630	62	17790	28.4	412.9	E	852	26.5	1300	71	414.5	71	417.5	36	77	77	
412.2	800	25.0	1480	66	17890	30.2	414.7	E	978	30.5	1210	75	416.0	75	419.2	37	89	89	
DA= 0.30 SQ MI = 192 AC										LATITUDE 42-28-30 LONGITUDE 71-21-42									
STREAM WATER QUALITY (B)										RUNOFF = 7.20 IN, PEAK FLOW = 124 CFS									
SITE RATING (1)										SITE RATING (1)									
129.0	0	0.0	2	15	68370	12.1	137.3	E	66	4.1	6230	14	139.5	14	142.5	15	21	21	
140.1	100	6.3	10270	15	68370	12.1	142.6	E	156	9.7	6600	35	144.7	35	147.7	20	41	41	
142.5	150	9.3	7710	26	45350	14.5	145.0	E	230	14.3	5020	43	146.3	43	149.3	21	50	50	
145.5	250	15.6	5350	39	34190	17.5	148.0	E	365	22.7	3670	53	148.6	53	151.6	24	65	65	
147.8	350	21.9	4370	49	31140	19.7	150.3	E	487	30.5	3140	60	150.3	60	153.3	25	80	80	
148.8	400	25.0	4240	53	31750	20.7	151.3	E	548	34.3	3090	64	151.3	64	154.3	26	88	88	
DA= 1.80 SQ MI = 1152 AC										LATITUDE 42-26-36 LONGITUDE 71-24-42									
STREAM WATER QUALITY (B)										RUNOFF = 7.20 IN, PEAK FLOW = 747 CFS									
SITE RATING (2)										SITE RATING (2)									
141.8	0	0.0	7	28	17210	9.7	155.0	E	398	4.1	1090	55	157.3	55	160.3	22	26	26	
147.7	100	1.0	4780	28	17210	9.7	156.2	E	457	4.8	1050	58	158.6	58	161.6	24	28	28	
155.8	421	4.4	1420	51	11760	17.7	160.3	E	689	7.1	860	71	162.7	71	165.7	28	38	38	
165.6	1062	11.1	840	81	11020	27.5	168.1	E	1291	13.5	690	100	170.6	100	173.6	36	63	63	
172.3	1704	17.7	790	114	11760	34.4	174.8	E	2024	21.1	660	149	177.2	149	180.2	42	92	92	
172.5	1715	17.9	780	115	11740	34.5	175.0	E	2039	21.2	660	150	177.3	150	180.3	42	93	93	
NOTES - (1) COSTS ARE BASED ON 1975 S.C.S. DESIGN CRITERIA AND COST DATA.																			

NOTES - (1) COSTS ARE BASED ON 1975 S.C.S. DESIGN CRITERIA AND COST DATA.

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(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T=TWO SPILLWAYS, N=NONI

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# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-ASSABET										SUBWATERSHED-ASSABET										BENEFICIAL POOL									
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# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-ASSABET									
BENEFICIAL POOL									
SUBWATERSHED-ASSABET									
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST SURF AC (\$)	DEPTH AT DAM (FT)	CREST ELEV (MSL)	STORAGE AT CREST	COST PER AC FT (\$)	DESIGN DAM
(MSL)	AC FT IN	AC FT (\$)	(AC)	(AC)	(FT)	(MSL)	AC FT IN	(AC)	DESIGN DAM
DA= 1.40 SQ MI = 896 AC									
STREAM WATER QUALITY (B)									
SITE RATING (1)									
336.7	0	0.0	7	22	56470	2.8	350.1 E	310 4.1	3190 *
343.2	100	1.2	22	56470	9.2	343.2 N	111 1.5	11160 *	355.6
352.5	394	5.3	41	35230	18.5	352.5 N	406 5.4	3530 *	48 *
364.7	983	13.2	56	26860	30.7	367.2 E	1138 15.2	1320 *	372.7
374.2	1572	21.1	69	27240	40.2	376.7 E	1763 23.6	1070 *	378.2
378.2	1867	25.0	75	28810	44.2	378.2 N	1878 25.2	1160 *	381.2
DA= 0.60 SQ MI = 384 AC									
STREAM WATER QUALITY (B)									
SITE RATING (1)									
411.0	0	0.0	1	69390	7.1	432.0 E	133 4.1	4170 *	436.2
429.5	100	3.0	9	36950	25.6	432.0 E	134 4.1	4680 *	437.5
437.2	217	6.8	22	36950	33.2	439.7 E	280 8.8	2870 *	441.5
449.5	450	14.1	33	35970	41.5	445.5 N	455 14.2	2590 *	443.9
451.9	683	21.4	43	31390	47.9	454.4 E	807 25.2	1690 *	452.4
452.5	710	22.2	45	30250	48.5	455.0 E	838 26.2	1640 *	457.7
DA= 5.03 SQ MI = 3219 AC									
STREAM WATER QUALITY (B)									
SITE RATING (1)									
294.4	0	0.0	10	58930	12.3	315.2 E	1113 4.1	3370 *	321.2
300.6	100	0.4	22	6080	18.6	300.6 N	140 0.5	9260 *	309.5
310.7	588	2.2	78	46050	28.7	310.7 N	628 2.3	5690 *	319.7
318.2	1563	5.8	184	26440	36.3	320.7 E	2100 7.8	2320 *	325.4
322.5	2442	9.1	225	24090	40.5	322.5 T	2482 9.3	2190 *	327.5

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(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, F=EXCAVATED, T= TWO SPILLWAYS, N= NOVEL

(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.

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## SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

## STUDY AREA-ASSABET

## SUBWATERSHED-ASSABET

BENEFICIAL POOL										EMERGENCY SPILLWAY										DESIGN HIGH WATER										DAM										SAFE YIELD									
ELEV	STORAGE	COST PER AC FT	AREA (AC)	COST/ SURF AC (\$)	DEPTH AT (FT)	CREST ELEV (+) TYPE (MSL)	STORAGE AT CREST	COST PER AC FT (\$)	USGS QUAD- HUDSON 100-YR PRIN SPWY DESIGN STORM	LATITUDE 42-27-24	LONGITUDE 71-30-24	905 CFS	FILL VOL (1000 CY)	PERCENT CHANGE	MSL	AC FT	IN	AC FT	IN	ELEV (MSL)	AREA (AC)	TOP ELEV (MSL)	HGT FT	AT 95																									
DA= 3.10 SQ MI = 1984 AC										STREAM WATER QUALITY (B)										RUNOFF = 7.20 IN, PEAK FLOW =										LATITUDE 42-27-24										71-30-24									
SITE-RATING (1)										SITE-RATING (1)										SITE-RATING (1)										SITE-RATING (1)										SITE-RATING (1)									
250.3	0	0.0	6	16	125340	17.5	264.4	E	686	4.1	3050	266.7	331	269.7	28	13	13	13	13	13	13	13	13	13	13	13																							
259.5	100	0.6	20050	92	26540	19.6	264.1	E	609	3.6	4020	267.0	344	270.0	28	14	14	14	14	14	14	14	14	14	14	14																							
261.6	217	1.2	11290	134	19730	20.5	265.0	E	827	5.0	3200	267.2	359	270.2	28	15	15	15	15	15	15	15	15	15	15	15																							
262.5	321	1.9	8240																																														
DA= 0.40 SQ MI = 256 AC										STREAM WATER QUALITY (B)										RUNOFF = 7.20 IN, PEAK FLOW =										LATITUDE 42-27-39										71-30-19									
SITE-RATING (1)										SITE-RATING (1)										SITE-RATING (1)										SITE-RATING (1)										SITE-RATING (1)									
273.7	0	0.0	3	31	15170	10.5	281.4	E	89	4.1	2880	283.7	39	286.7	15	18	18	18	18	18	18	18	18	18	18	18																							
282.5	115	5.4	4070									286.5	57	289.5	18	32	32	32	32	32	32	32	32	32	32	32																							
DA= 0.50 SQ MI = 320 AC										STREAM WATER QUALITY (B)										RUNOFF = 7.20 IN, PEAK FLOW =										LATITUDE 42-33-49										71-26-19									
SITE-RATING (1)										SITE-RATING (1)										SITE-RATING (1)										SITE-RATING (1)										SITE-RATING (1)									
271.6	0	0.0	2	18	26180	15.7	284.1	E	111	4.1	2780	286.4	24	289.4	21	12	12	12	12	12	12	12	12	12	12	12																							
283.7	100	3.8	4670	24	23420	20.9	289.2	E	155	5.8	3020	288.7	29	291.7	24	16	16	16	16	16	16	16	16	16	16	16																							
286.7	161	6.0	3570	30	21200	24.4	294.9	E	233	8.7	2460	291.4	38	294.4	26	22	22	22	22	22	22	22	22	22	22	22																							
288.9	221	8.3	2840	41	17370	24.5	295.0	E	308	11.6	2040	293.6	46	296.6	29	28	28	28	28	28	28	28	28	28	28	28																							
292.4	342	12.8	2080	42	17210	24.5	295.0	E	460	17.2	1550	296.7	58	299.7	32	39	39	39	39	39	39	39	39	39	39	39																							
292.5	349	13.1	2050						468	17.5	1530	296.9	58	299.9	32	39	39	39	39	39	39	39	39	39	39	39																							
NOTES - (1) COSTS ARE BASED ON 1975 S.C.S. DESIGN CRITERIA AND COST DATA.										NOTES - (1) COSTS ARE BASED ON 1975 S.C.S. DESIGN CRITERIA AND COST DATA.										NOTES - (1) COSTS ARE BASED ON 1975 S.C.S. DESIGN CRITERIA AND COST DATA.										NOTES - (1) COSTS ARE BASED ON 1975 S.C.S. DESIGN CRITERIA AND COST DATA.										NOTES - (1) COSTS ARE BASED ON 1975 S.C.S. DESIGN CRITERIA AND COST DATA.									
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(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, E=EXCAVATED, T= TWO SPILLWAYS, N= NONI										(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, E=EXCAVATED, T= TWO SPILLWAYS, N= NONI										(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, E=EXCAVATED, T= TWO SPILLWAYS, N= NONI										(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, E=EXCAVATED, T= TWO SPILLWAYS, N= NONI										(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, E=EXCAVATED, T= TWO SPILLWAYS, N= NONI									
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(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE										(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE										(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE										(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE										(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE									
CONSIDERED ACCURATE TO THAT DEGREE.										CONSIDERED ACCURATE TO THAT DEGREE.										CONSIDERED ACCURATE TO THAT DEGREE.										CONSIDERED ACCURATE TO THAT DEGREE.										CONSIDERED ACCURATE TO THAT DEGREE.									





EXISTING SITE AS-1703 (Musket Quid Sportsmans Pond)

Location: On Second Division Brook about 2700 feet upstream from Harrington Avenue in Concord, Massachusetts.

Maynard, Mass. USGS quadrangle

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres)</u>	<u>(Sq. Mi.)</u>
14	10	1200	1.9

Potential for Expansion: This site has potential for expansion. Please refer to Potential Site AS-1703 for details.

Remarks: The dam is a narrow earthfill structure. The spillway is a concrete structure about 8 feet wide. There is some seepage occurring under the dam.

Ownership and Use: The pond is owned by Concord Sportsmen's Club and is used for recreation.

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EXISTING SITE AS-1725 (George H. Nichols)

Location: On the Assabet River about 1100 feet upstream from Mill Road in Westborough, Massachusetts.

Shrewsbury, Mass. USGS quadrangle

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres)</u>	<u>(Sq. Mi.)</u>
380	20	4600	7.2

Potential for Expansion: Surface area could be increased by about 100 acres. Arch Street, Mill Road, and three houses would be affected.

Remarks: The dam is an earthfill structure constructed as part of the SuAsCo PL-566 Watershed Protection and Flood Prevention Project. The site has 1254 acre-feet of floodwater retarding storage and 1602 acre-feet of fish and wildlife water storage. The principal spillway is a reinforced concrete riser with a 48-inch diameter conduit. The excavated emergency spillway is a 100-foot wide section located in the left abutment

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EXISTING SITE AS-1726 (Smith Pond)

Location: On Hop Brook at Otis Street in Northborough,  
Massachusetts.

Shrewsbury, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
20	8	4800	7.5

Potential for Expansion: Limited. The pond is surrounded by roads and houses which would be affected. Route 20 and Hop Brook Dam, located immediately upstream, would also be affected by expansion.

Remarks: The Otis Street highway embankment forms the dam. The downstream face of the dam is a vertical stone wall. The spillway consists of a 15-foot wide concrete weir and a concrete-walled channel under the road.

Ownership and Use: The pond is owned by Armen Kalenian and is used for wildlife conservation and recreation.

\*\*\*\*\*

EXISTING SITE AS-1727 (Hop Brook Dam, A3c)

Location: On Hop Brook about 800 feet upstream from Route 20  
in Northborough, Massachusetts.

Shrewsbury, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
6	23	3150	4.9

Potential for Expansion: It appears that a wildlife pool could be developed at the site.

Remarks: The dam is an earthfill structure constructed as part of the SuAsCo PL-566 Watershed Protection and Flood Prevention Project. The site has 1340 acre-feet of floodwater retarding storage and 22 acre-feet of sediment storage. The principal spillway is a reinforced concrete riser with a 36-inch diameter conduit. The excavated emergency spillway is a 340-foot wide section located in the left abutment.

\*\*\*\*\*

EXISTING SITE AS-1728 (Cold Harbor Brook Dam, A4c)

Location: On Cold Harbor Brook about 3700 feet upstream from Lincoln Street in Northborough, Massachusetts.

Shrewsbury, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
-	22	3000	4.7

Potential for Expansion: It appears that a wildlife pool could be developed at the site.

Remarks: The dam is an earthfill structure constructed as part of the SuAsCo PL-566 Watershed Protection and Flood Prevention Project. The site has 1450 acre-feet of floodwater retarding storage and 10 acre-feet of sediment storage. The principal spillway is a reinforced concrete riser with a 42-inch diameter conduit. The excavated emergency spillway is a 500-foot wide section located in the left abutment.

\*\*\*\*\*

EXISTING SITE AS-1729 (Chauncy Lake)

Location: On an unnamed tributary to Stirrup Brook about 1000 feet southwest of Westborough State Hospital in Westborough, Massachusetts.

Marlboro, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
175	4	1000	1.5

Potential for Expansion: Limited. The lake is already large in relation to the size of its drainage area. The lake is surrounded by streets that would be affected by expansion of the lake. A large area of very shallow water would be created.



EXISTING SITE AS-1729 (Chauncy Lake) (Continued)

Remarks: A Westborough State Hospital road forms the dam. The spillway is a 2-foot wide concrete weir with provision for stop logs.

Ownership and Use: This is an enlarged great pond with flowage rights held by the Commonwealth of Massachusetts. The lake is used for recreation. A Westborough town beach is located on the south side of the lake.

\*\*\*\*\*

EXISTING SITE AS-1730 (Bartlett Pond)

Location: On Stirrup Brook about 100 feet upstream from Bartlett Street in Northborough, Massachusetts.

Marlborough, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
35	10	1800	2.8

Potential for Expansion: Limited. The pond is surrounded by houses and roads which would be affected by expansion. The MDC Wachusett Aqueduct located immediately downstream might also be affected.

Remarks: The dam is an earthfill structure. The spillway is a series of stone masonry steps. The dam is in good condition. There are some trees growing on the upstream slope of the dam.

Ownership and Use: The pond is owned by the town of Northborough and is used for recreation.

\*\*\*\*\*

EXISTING SITE AS-1731 (Tyler Dam)  
(Under construction in 1976)

Location: On the Assabet River about 400 feet upstream from Robin Hill Road in Marlborough, Massachusetts.

Marlborough, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
-	31	13,500	21.1

Potential for Expansion: It appears that a wildlife pool could be developed at the site. The increased flood pool levels would affect several highways.

Remarks: The dam is an earthfill structure constructed as part of the SuAsCo PL-566 Watershed Protection and Flood Prevention Project. The site has 2660 acre-feet of floodwater retarding storage. The principal spillway is a reinforced concrete riser with a 7' x 9' conduit. The emergency spillway is a 275-foot wide concrete drop structure.

\*\*\*\*\*

EXISTING SITE AS-1732 (Millham Reservoir)

Location: On North Branch Brook about 400 feet upstream from Assabet River in Marlborough, Massachusetts.

Marlborough, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
70	22	1900	3.0

Potential for Expansion: It appears that the reservoir level could be raised at least 15 feet without affecting facilities other than Millham Street and the reservoir gatehouse.

Remarks: The dam is an earthfill structure with a concrete core wall. Upstream and downstream slopes are riprapped. Principal spillway is a 20-foot wide rock cut with a concrete weir and provision for stop logs. There is also a 30-inch diameter gated outlet pipe. The dam has been recently modified in conjunction with the construction of the Tyler Site (Existing Site AS-1731) located immediately downstream.

EXISTING SITE AS-1732 (Millham Reservoir) (Continued)

Ownership      The reservoir is owned by the city of Marlborough  
and              and is used as an auxiliary municipal water supply.  
Use:

\*\*\*\*\*

EXISTING SITE AS-1733 (Williams Lake)

Location:      On Millham Brook about 1500 feet upstream from Inter-  
state Route 495 in Marlborough, Massachusetts.

Marlborough, Mass. USGS quadrangle

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres)</u>	<u>(Sq. Mi.)</u>
65	6	350	0.5

Potential      Limited. The lake is already large in relation to the  
for              size of its drainage area. Expansion would be restricted  
Expansion:      by Route 20 to the north. Steep topography limits any  
significant increase in surface area.

Remarks:      The dam is an earthfill structure. The downstream face  
is vertical and is lined with fieldstone. The spillway  
is a 4-foot wide stone flume.

Ownership      The lake is owned by the city of Marlborough and is  
and              used as a municipal water supply.  
Use:

\*\*\*\*\*

EXISTING SITE AS-1734 (Brewer Brook Dam, A6f)

Location: On Brewer Brook about 800 feet upstream from Pleasant Street in Berlin, Massachusetts.

Shrewsbury, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
-	24	750	1.2

Potential for Expansion: It appears that a 50-acre pool could be built at the site without affecting facilities other than the present dam.

Remarks: The dam is an earthfill structure constructed as part of the SuAsCo Pl-566 Watershed Protection and Flood Prevention Project. The site has 200 acre-feet of floodwater retarding storage and 10 acre-feet of sediment storage. The principal spillway is a reinforced concrete riser with a 24-inch diameter conduit. The excavated emergency spillway is a 30-foot wide section located in the left abutment.

\*\*\*\*\*

EXISTING SITE AS-1735 (Gates Pond)

Location: On Gates Pond Brook about 3600 feet upstream from River Road in Berlin, Massachusetts.

Marlborough, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>Sq. Mi.)</u>
75	15	300	0.5

Potential for Expansion: Limited. The pond is already large in relation to the size of its drainage area.

Remarks: The dam is an earthfill structure. There is a stone-lined spillway and channel at the left abutment. The spillway is 7 feet wide and 6 feet deep. Pumping stations are located at the north end of the pond.

Ownership and Use: The pond is owned by the town of Hudson and is used as municipal water supply.

\*\*\*\*\*



EXISTING SITE AS-1736 (Fort Meadow Reservoir)

Location: On Fort Meadow Brook about 400 feet upstream from Causeway Street in Hudson, Massachusetts. Most of the reservoir area is in Marlborough, Massachusetts.

Marlborough, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
285	25	2500	3.9

Potential for Expansion: Limited. The reservoir is surrounded by development. Surface area is already large in relation to drainage area size.

Remarks: The dam is an earthfill structure. The principal spillway is a concrete box drop-inlet with a concrete conduit. Dam and spillway are in good condition.

Ownership and Use: The reservoir is owned by the town of Marlborough and is used for recreation.

\*\*\*\*\*

EXISTING SITE AS-1737 (Bruce's Pond)

Location: On Danforth Brook about 400 feet upstream from Main Street in Hudson, Massachusetts.

Hudson, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
13	15	4,450	7.0

Potential for Expansion: Limited. The pond is surrounded by urban development on all sides.

Remarks: The structure is an old mill dam. Spillway is a granite block weir about 20 feet wide. The weir outlets to a series of granite block steps which form an outlet ramp. Sidewalls of the weir are concrete with mill buildings located on both abutments. There is also a mill race located on the right abutment. The dam and spillway are in good condition.

EXISTING SITE AS-1737 (Bruce's Pond) (Continued)

Ownership  
and  
Use:

The pond is owned by Larkin Lumber Company and is presently not used for a specific purpose.

\*\*\*\*\*

EXISTING SITE AS-1738 (Tripp Pond)

Location: On Hog Brook at River Street in Hudson, Massachusetts.

Hudson, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
6	10	1950	3.0

Potential  
for

Expansion: Limited. The pond is confined by urban development.

Remarks: The River Street highway embankment forms the dam. The spillway is a 4' by 6' concrete riser with provision for stop logs. A stone block culvert 4' deep and 6' wide carries flow beneath the road.

Ownership  
and  
Use:

The pond is owned by the town of Hudson and is used for recreation and fishing.

\*\*\*\*\*

EXISTING SITE AS-1739 (Fyfeshire Pond)

Location: On North Brook about 1300 feet downstream from Wataquadock Hill Road in Bolton, Massachusetts.

Clinton, Mass. USGS quadrangle

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres)</u>	<u>(Sq. Mi.)</u>
8	12	600	0.9

Potential for Expansion: Raising the present pool level by 15 feet would triple the pool area. A much longer dam would be required. Wataquadock Hill Road and 4 houses would be affected.

Remarks: The dam is an earthfill structure with vertical stone faces on the upstream and downstream sides. The spillway is a 15-foot wide concrete structure with provision for flashboards.

Ownership and Use: The pond is owned by the town of Bolton and is used as a conservation area.

\*\*\*\*\*

EXISTING SITE AS-1740 (Lester G. Ross Dam)

Location: On North Brook about 700 feet upstream from Linden Street in Berlin, Massachusetts.

Clinton, Mass. USGS quadrangle

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres)</u>	<u>(Sq. Mi.)</u>
10	44	5950	9.3

Potential for Expansion: A small wildlife pool might be established at the site. Expansion above a small pool would probably necessitate raising Route 62 and a railroad line to maintain the present volume of floodwater retarding storage.

EXISTING SITE AS-1740 (Lester G. Ross Dam) (Cont'd)

Remarks: The dam is an earthfill structure constructed as part of the SuAsCo PL-566 Watershed Protection and Flood Prevention Project. The site has 1991 acre-feet of flood-water retarding storage. The principal spillway is a reinforced concrete riser with a 48-inch diameter conduit. The excavated emergency spillway is a 185-foot wide section with a concrete control section.

\*\*\*\*\*

EXISTING SITE AS-1741 (Mill Pond, Wheeler Pond)

Location: On North Brook about 50 feet upstream from Pleasant Street in Berlin, Massachusetts.

Shrewsbury, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
12	8	9700	15.2

Potential for Expansion: Raising the present pond level by 15 feet would create a acres surface area. Four roads and six houses would be affected.

Remarks: The dam is an earthfill structure with a vertical stone face on the downstream side. The principal spillway is a 4' wide steel flashboard structure with a box culvert through the dam. An auxiliary spillway is a 25-foot wide notched concrete weir set about 1 foot above the normal water level. Trees and brush are growing on the dam.

Ownership and Use: The pond is owned by the estate of Prino Bonazzoli and is not used for a specific purpose.

\*\*\*\*\*



EXISTING SITE AS-1742 (Barefoot Brook Dam, A6h)

Location: On Barefoot Brook about 300 feet downstream from the Northborough - Marlborough boundary in Marlborough, Massachusetts.

Shrewsbury, Mass. USGS quadrangle.

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres)</u>	<u>(Sq. Mi.)</u>
-	16	700	1.1

Potential for Expansion: A wildlife pool might be established at the site. Expansion above a shallow wildlife pool would required an auxiliary dike about 1500 feet long.

Remarks: The dam is an earthfill structure constructed as part of the SuAsCo PL-566 Watershed Protection and Flood Prevention Project. The site has 173 acre-feet of floodwater retarding storage. The principal spillway is a reinforced concrete riser with a 24-inch diameter conduit. The excavated emergency spillway is a 30-foot wide section located in the left abutment.

\*\*\*\*\*

EXISTING SITE AS-1743 (Rocky Pond)

Location: On Cold Harbor Brook at Rocky Pond Road in Boylston, Massachusetts.

Shrewsbury, Mass. USGS quadrangle

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres)</u>	<u>(Sq. Mi.)</u>
65	6	350	0.5

Potential for Expansion: Steep topography limits any significant increase in surface area.

EXISTING SITE AS-1743 (Rocky Pond) (Continued)

Remarks: The Rocky Pond Road highway embankment forms the dam. The spillway system is comprised of 3 1-foot diameter corrugated metal pipes. Trees and brush are growing on the downstream slope of the embankment.

Ownership and Use: This appears to be an enlarged natural great pond and is used for recreation. The shoreline is owned by Clayton Jenks.

\*\*\*\*\*

EXISTING SITE AS-1744 (Northborough Reservoir)

Location: On Rawson Hill Brook about 100 feet upstream from Reservoir Street in Shrewsbury, Massachusetts. Thirty percent of the dam and reservoir area are located in Boylston, Massachusetts.

Shrewsbury, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
5	15	1400	2.2

Potential for Expansion: The water level could be raised over 50 feet without affecting facilities other than Reservoir Street and the pumping equipment. Gravel in abutments might limit the potential for expansion because of increased seepage.

Remarks: The dam is an earthfill structure built in 1882. The spillway is a series of 26 foot wide stone steps. Brush and trees are growing on the downstream slope of the embankment.

Ownership and Use: The reservoir is owned by the town of Northborough and was formerly used for municipal water supply purposes. It is now used as a conservation area.

\*\*\*\*\*

EXISTING SITE AS-1745 (Rawson Hill Dam, A4a)

Location: On Rawson Hill Brook about 700 feet upstream from Prospect Street in Shrewsbury, Massachusetts.

Shrewsbury, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
0	16	950	1.5

Potential for Expansion: Limited by development south of Hill Street

Remarks: The dam is an earthfill structure constructed as part of the SuAsCo PL-566 Watershed Protection and Flood Protection Project. The site has 261 acre-feet of floodwater retarding storage and 3 acre-feet of sediment storage. The principal spillway is a reinforced concrete riser with a 30-inch diameter conduit. The emergency spillway is a 110-foot wide vegetated section.

\*\*\*\*\*

EXISTING SITE AS-1746 (Dean Park Pond)

Location: On Hop Brook about 700 feet upstream from School Street in Shrewsbury, Massachusetts.

Shrewsbury, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
7	6	350	0.5

Potential for Expansion: Steep topography limits any significant increase in surface area.

Remarks: A road embankment in Dean Park forms the dam. The spillway system consists of three culverts under the road.

Ownership and Use: The pond is owned by the town of Shrewsbury and is used for recreation.

\*\*\*\*\*

EXISTING SITE AS-1747 (Eaton Pond)

Location: On an unnamed tributary to Hop Brook about 150 feet upstream from Walnut Street in Shrewsbury, Massachusetts.

Shrewsbury, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	(Sq. Mi.)
1	4	1350	2.1

Potential for Expansion: Limited. Houses have been built adjacent to the site.

Remarks: The dam is a concrete weir structure. The dam has been breached and the pond level lowered about 4 feet.

Ownership and Use: The pond is owned by the town of Shrewsbury and is used for recreation.

\*\*\*\*\*

EXISTING SITE AS-1748 (Fletcher's Pond)

Location: On Elizabeth Brook about 1200 feet downstream from Gleasondale Road (Route 62) in Stow, Massachusetts.

Hudson, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	(Sq. Mi.)
6	8	11,500	17.9

Potential for Expansion: Limited. A large area of shallow water would be created. Route 62 and 6 houses would be affected by expansion.

Remarks: The dam is an earthfill structure with a 60-foot wide weir spillway located near the right abutment. The spillway is constructed of sloping timbers and has concrete sidewalls. There is also a mill race located near the left abutment which overflows near the downstream toe of the dam. The pond appears to be very shallow and filled with sediment. Large trees and brush are growing on the earthfill portion of the dam.



EXISTING SITE AS-1748 (Fletcher's Pond) (Continued)

Ownership and Use: The pond is owned by Charles Fletcher and is used for recreation.

\*\*\*\*\*

EXISTING SITE AS-1749 (Vose Pond)

Location: On Taylor Brook about 2800 feet upstream from Old Marlborough Road in Maynard, Massachusetts.

Maynard, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
5	6	35	0.1

Potential for Expansion: The small drainage area limit expansion potential.

Remarks: The dam is a rock and earthfill structure. There is no emergency spillway. Flow over the dam has caused erosion of the fill material. Large trees are growing in the spillway.

Ownership and Use: The pond is owned by Beker Corporation and is used for recreation.

\*\*\*\*\*

EXISTING SITE AS-1750 (Fort Pond)

Location: On Fort Pond Brook about 50 feet downstream from  
Route 27 in South Acton, Massachusetts.

Maynard, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
10	15	12,300	19.2

Potential for Expansion: Limited. The pond is surrounded by streets and houses which would be affected.

Remarks: This is an old stone mill dam. It has a 30-foot wide stone spillway. Old mill buildings are located on the right abutment.

Ownership and Use: The pond is owned by David Erickson and is used for wildlife habitat.

\*\*\*\*\*

EXISTING SITE AS-1751 (Haywards Pond)

Location: On Second Division Brook about 200 feet upstream from  
Harrington Avenue in Concord, Massachusetts.

Maynard, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
18	8	1300	2.0

Potential for Expansion: Topography limits any significant increase in surface area. Residential development would be affected by expansion.

Remarks: The dam is an earthfill structure with a concrete weir spillway at the right abutment. The spillway has two 8-foot wide control sections equipped with flashboards. A 12-inch diameter drainpipe is located near the spillway. Trees and brush are growing on the downstream side of the dam.

Ownership and Use: The pond is owned by Elsie Kennedy and is used for recreation and wildlife habitat.

\*\*\*\*\*

EXISTING SITE AS-1752 (Warner's Pond)

Location: On Fort Pond Brook about 250 feet upstream from  
Commonwealth Avenue in Concord, Massachusetts.

Maynard, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
55	8	30,400	47.4

Potential  
for  
Expansion: Limited by the urban development surrounding the  
pond.

Remarks: The dam is an earthfill and rock structure with a 50-foot  
wide stone overflow spillway. There is an old mill race  
located on the right abutment.

Ownership  
and  
Use: The pond is owned by the town of Concord and is used as a  
conservation area.

\*\*\*\*\*

EXISTING SITE AS-1753

Location: On Nashoba Brook about 50 feet downstream from Concord  
Road in Acton, Massachusetts.

Maynard, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
12	10	12,200	19.1

Potential  
for  
Expansion: Limited. Route 27, Route 119 and a railroad line would  
be affected.

Remarks: The dam is a concrete buttress structure. The dam is  
30 feet long with three 7-foot wide weir sections. An  
old mill on the right abutment has been converted into  
a private residence. The dam is in good condition.

Ownership  
and  
Use: The pond is owned by Winston Newman and is used for  
wildlife habitat.

\*\*\*\*\*

EXISTING SITE AS-1754 (Angiers Pond)

Location: On Spencer Brook about 800 feet upstream from Barretts Mill Road in Concord, Massachusetts.

Maynard, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
25	12	3700	5.8

Potential for Expansion: Raising the present pond level by 10 feet would create a 160-acre surface area. Two streets and two houses would be affected.

Remarks: The dam is an earthfill structure with a private driveway across the top. There are twin concrete spillways with three feet of flashboard control possible. The weirs are about 20 feet wide.

Ownership and Use: The pond is owned by the Concord Rod and Gun Club and is used for recreation.

\*\*\*\*\*

EXISTING SITE AS-1755

Location: On Dakins Brook at Lowell Road in Concord, Massachusetts.

Concord, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
9	12	400	0.6

Potential for Expansion: Raising the present pond level by 15 feet would create a 40-acre pool. Two streets and two houses would be affected.

Remarks: The Lowell Road highway embankment forms the dam. The spillway is a box-inlet drop structure outletting to a 42-inch diameter corrugated metal pipe. This structure also controls the elevation of the pond at Barnes Hill Road.

Ownership and Use: The pond is owned by the town of Concord and is used for recreation.

\*\*\*\*\*



EXISTING SITE AS-1756 (Nagog Pond)

Location: On Nagog Brook about 5000 feet upstream from Route 27 in Acton, Massachusetts. One-half of the reservoir area is in Littleton, Massachusetts.

Westford, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
275	4	750	1.2

Potential for Expansion: Storage volume could be increased but Route 2A, Nashoba Road, Nagog Hill Road and at least ten houses would be affected.

Remarks: The dam is a 120-foot long concrete gravity structure with earthfill on the upstream side. A 10-foot wide spillway weir is located near the center of the dam. A gate-house permits pond drawdown. The dam is in good condition.

Ownership and Use: The pond is owned by the town of Concord and is used as a water supply.

\*\*\*\*\*

EXISTING SITE AS-1757 (Bellows Farm Mill Dam)

Location: On Nashoba Brook about 1700 feet downstream of Carlisle Road in Acton, Massachusetts.

Westford, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
8	6	7500	11.7

Potential for Expansion: Limited by upstream development and the lack of high abutments on the right side of the pond.

EXISTING SITE AS-1757 (Bellows Farm Mill Dam) (Continued)

Remarks: The dam is an old earthfill and stone mill dam with a new concrete spillway. The dam has a vertical rock wall on the downstream face. The spillway is 8 feet wide with two feet of flashboard control.

Ownership and Use: The pond is owned by Yankee Construction Company and is used for recreation and wildlife habitat.

\*\*\*\*\*

EXISTING SITE AS-1758 (Buttrick Pond)

Location: On Spencer Brook about 50 feet east of Concord Street in Carlisle, Massachusetts.

Billerica, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
4	12	1000	1.5

Potential for Expansion: Raising the present pond level by 15 feet would create a 70-acre pool. Russell Street, Concord Street and four houses would be affected.

Remarks: The dam is a concrete buttress structure with a 3-foot wide spillway weir. There is an earthfill and rock dike on the right abutment with a 6-foot wide weir section.

Ownership and Use: The pond is owned by Margaret Macone and is used for wildlife habitat.

\*\*\*\*\*

EXISTING SITE AS-1759 (Cobbs Pond)

Location: On an unnamed tributary to Nashoba Brook upstream of Pickard Lane in Littleton, Massachusetts.

Westford, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres) (Sq. Mi.)
15	6	165 0.3

Potential for Expansion: The small drainage area limits expansion.

Remarks: The dam is an earthfill structure with a gravel road across the top. The spillway is a 5-foot wide concrete weir and flume. Concrete in the spillway is cracked in places.

Ownership and Use: The pond is owned by Cobbs Breeding Corporation and is used for water supply and recreation.

\*\*\*\*\*

EXISTING SITE AS-1760 (Flag Hill Road Pond)

Location: On an unnamed tributary to Heath Hen Meadow Brook about 300 feet upstream from the Stow-Boxborough town line in Boxborough, Massachusetts.

Hudson, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres) (Sq. Mi.)
15	6	75 0.1

Potential for Expansion: The small drainage area limits expansion potential. The pond is already large in relation to the size of the drainage area.

EXISTING SITE AS-1760 (Flag Hill Road Pond)(Continued)

Remarks: The dam is a wide earthfill structure. The spillway is a corrugated metal riser and pipe. The spillway is rusting.

Ownership and Use: The pond is owned by Helen Hoar and is used for wildlife habitat.

\*\*\*\*\*

EXISTING SITE AS-1761 (Horsemeadows Pond)

Location: On Elizabeth Brook about 600 feet upstream from Sherry Road in Harvard, Massachusetts.

Hudson, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	(Sq. Mi.)
9	10	350	0.5

Potential for Expansion: The small drainage area limits expansion potential.

Remarks: The dam is an earthfill structure with a concrete spillway located near the center. A three-foot flashboard structure controls pond levels. A house has been built on the dam at the site of an old sawmill.

Ownership and Use: The pond is owned by Ralph Gillette and is used for wildlife habitat.

\*\*\*\*\*



EXISTING SITE AS-1762

Location: On Elizabeth Brook about 2800 feet downstream from Interstate Route 495 in Harvard, Massachusetts.

Hudson, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
9	10	3000	4.7

Potential for Expansion: Raising the pond level by 5 feet would create a 50-acre pool area. Eldridge Road would be affected. Expansion beyond 10 feet would affect Route 495.

Remarks: The dam is a gravity, stone structure. The structure is 30 feet long with a six-foot weir section.

Ownership and Use: The pond is owned by Mrs. William Campbell and is used for recreation and wildlife.

\*\*\*\*\*

EXISTING SITE AS-1763, 1764 (Delaney-East Bolton Complex)

Location: On Elizabeth Brook about 2500 feet upstream from Delaney Street in Stow, Massachusetts. About one-half of the pool area is in Bolton, Massachusetts.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Ft.)</u>
168	22	9300	14.5

Potential for Expansion: Topography limits any significant increase in surface area. The pool could be deepened, but wildlife values might be lost.

EXISTING SITE AS-1763, 1764 (Delaney-East Bolton Complex) (Continued)

Remarks: The Delaney and East Bolton dams were constructed as part of the SuAsCo PL-566 Watershed Protection and Flood Prevention Project. Both dams are earth-fill structures. The complex has 3500 acre-feet of floodwater retarding storage and 470 acre-feet of fish and wildlife, and sediment storage. The principal spillway of each dam is a reinforced concrete riser with a 48-inch diameter conduit. Flood flows from the East Bolton site are diverted through a 100-foot wide diversion to the Delaney Pool area. The excavated emergency spillway is a 600-foot wide section in the right abutment of the Delaney dam.

\*\*\*\*\*

EXISTING SITE AS-1765 (Delaney Pond)

Location: On Elizabeth Brook near Delaney Street in Stow, Massachusetts.

Hudson, Mass. USGS quadrangle

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres)</u>	<u>(Sq. Mi.)</u>
8	8	9550	14.9

Potential for Expansion: Limited by the Delaney Dam (Existing Site AS-1763) located immediately upstream.

Remarks: The dam is an earthfill structure with a 20-foot wide stone and concrete spillway. Trees and brush are growing on the earthfill. A house is located on one abutment.

Ownership and Use: The pond is owned by Thomas Zander and is used for wildlife habitat.

\*\*\*\*\*

EXISTING SITE AS-1766 (Boons Pond)

Location: On an unnamed tributary to the Assabet River at Barton Road in Stow, Massachusetts. About one-quarter of the pond area is in Hudson.

Hudson and Maynard, Mass. USGS quadrangles

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage</u> (Acres)	<u>(Sq. Mi.)</u>
165	15	1050	1.6

Potential for Expansion: Limited. The pond is surrounded by cottages. The pond is already large in relation to the size of its drainage area.

Remarks: The Barton Road highway embankment forms the dam. The spillway is a 4' by 4' concrete box culvert with a drop inlet. Large trees are growing on the embankment. Seepage was noted all along the downstream slope of the dam.

Ownership and Use: The pond is owned by the town of Stow and is used for recreation.

\*\*\*\*\*

EXISTING SITE AS-1767 (Wheeler Pond)

Location: On Elizabeth Brook about 500 feet upstream from Wheeler Street in Stow, Massachusetts.

Hudson, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
19	8	10,800	16.9

Potential for Expansion: Raising the present pond level by ten feet would create a 75-acre pool. Two houses would be affected. Outwash soils on the right abutment might cause severe leakage problems.

EXISTING SITE AS-1767 (Wheeler Pond) (Continued)

Remarks: The dam is an earthfill structure which has been breached. The principal spillway is constructed of stone with sloping timbers placed on the upstream side of the weir and held in place with earthfill. A 3' by 2' concrete box conduit passes through the right end of the weir structure.

Ownership and Use: The pond is owned by Stow Acres Country Club and is used for recreation.

\*\*\*\*\*





AS-1703  
Musket Quid Sportsmans Pond



AS-1726 (Smith Pond)  
Spillway Weir



AS-1725 (George H. Nichols Dam)  
Principal Spillway Outlet



AS-1729 (Chauncy Lake)  
Spillway Weir









AS-1730 (Bartlett Pond)  
Dam and Spillway



AS-1738 (Tripp Pond)  
Spillway Inlet



AS-1737 (Bruce's Pond)  
Spillway



AS-1741 (Mill Pond, Wheeler Pond)  
Auxilliary Spillway









AS-1744 (Northborough Reservoir)  
Spillway



AS-1748 (Fletcher's Pond)  
Spillway



AS-1747 (Eaton Pond)  
Breached Spillway



AS-1752 (Warner's Pond)  
Spillway









AS-1753  
Buttress Dam



AS-1755  
Spillway Inlet



AS-1754 (Angiers Pond)  
Spillway



AS-1756 (Nagog Pond)  
Dam and Gatehouse









AS-1757 (Bellows Farm Mill Dam)  
Dam and Spillway



AS-1760 (Flag Hill Road Pond)  
Spillway Inlet



AS-1759 (Cobbs Pond)  
Spillway



AS-1761 (Horsemeadows Pond)  
Dam and Spillway









AS-1763 (Delaney Dam)  
Principal Spillway Inlet



AS-1766 (Boon's Pond)  
Dam and Spillway Inlet



AS-1765 (Delaney Pond)  
Spillway



AS-1767 (Wheeler Pond)  
Dam



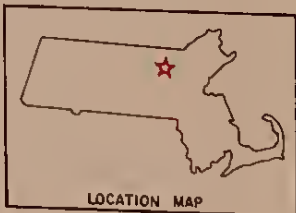






LEGEND

- Watershed Boundary
- Potential Site Showing Beneficial Pool For Largest Structure
- 1717
- Drainage Area Above Structure
- Existing Pond Or Reservoir
- 1760



Source — U.S.G.S. Quad Sheets  
Ayer, Mass. — 1966  
Billerica, Mass. — 1965  
Concord, Mass. — 1958  
Hudson, Mass. — 1966  
Maynard, Mass. — 1965  
Westford, Mass. — 1966

SHEET 1 OF 2  
**ASSABET RIVER (AS-17)**  
ASSABET STUDY AREA  
MASSACHUSETTS  
**EXISTING AND POTENTIAL RESERVOIR SITES**  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE









# LEGEND

SUBWATERSHED BOUNDARY

DRAINAGE AREA ABOVE STRUCTURE

EXISTING POND OR RESERVOIR

EXISTING PL-566 STRUCTURE WITH FLOODWATER RETARDING POOL

POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE



Source—U.S.G.S. Quad Sheets  
Clinton, Ma.—1965  
Grafton, Ma.—1969  
Hudson, Ma.—1969  
Marlborough, Ma.—1969  
Shrewsbury, Ma.—1969

0 1000 2000 3000 4000 FEET

SHEET 2 OF 2

## ASSABET RIVER (AS-17)

ASSABET STUDY AREA  
MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE







## CONCORD STUDY AREA

## SITE DATA FOR

## Subwatershed CO-17, Concord River

This subwatershed covers about 25,000 acres in Bedford, Billerica, Carlisle, Chelmsford, Concord, Lincoln, Lowell and Tewksbury; all in Middlesex County.

The main stream in the subwatershed is the Concord River which forms in Concord at the confluence of the Assabet and Sudbury Rivers. The river flows northerly through Bedford, Carlisle, Billerica, and Chelmsford to Lowell where it enters the Merrimack River. Elevations in the Study Area range from a high of 365 feet (msl) on Hemlock Hill in Carlisle to about 55 feet at the confluence with the Merrimack River.

Two potential reservoir sites and eight reservoirs were studied.

POTENTIAL SITE CO-1701

Location: On Mill Brook about 500 feet upstream from Dudley Road in Billerica, Massachusetts. Half of the dam site and 3/4 of the pool area are in Bedford.

Billerica, Mass. USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Dudley Road	125
	6 houses	130
	2 barns	130
	4 houses	135

Geologic Conditions: Both abutments are outwash sand and gravel underlain by silty sand. Surficial materials are swamp deposits and outwash sand and gravel. Depth to schist bedrock in the foundation is estimated to be from 90 to 100 feet. Waterholding capabilities appear to be fair. Leakage is expected through both abutments. Testing of the foundation is important before a good evaluation of waterholding can be made. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

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POTENTIAL SITE CO-1702

Location: On Saw Mill Brook about 600 feet upstream from  
Monument Street in Concord, Massachusetts.

Concord, Mass. USGS quadrangle.

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Access road through Conservation Area	125

Geologic Conditions: Both abutments are silty sand with gravel, cobbles, and boulders with some outwash sand and gravel at the surface and bedrock Knobs on the right abutment. Surficial materials are swamp deposits, englacial drift, and outwash sand and gravel. Depth to schist bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency location. The spillway can probably be excavated in bedrock.

\*\*\*\*\*



EXISTING SITE CO-1703 (Buttricks Hill Pond)

Location: On an unnamed tributary to the Concord River about 150 feet upstream of its confluence with the Concord River in Concord, Massachusetts.

Concord, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
8	3	250	0.4

Potential for Expansion: The small drainage area limits expansion potential. Sand and gravel in both abutments might cause excessive seepage losses.

Remarks: The dam is a low earthfill structure. The spillway consists of a 2' by 2' drop inlet and a 15-inch diameter corrugated metal pipe conduit. Trees and brush are growing on the dam. The spillway is in poor condition.

Ownership and Use: The pond is owned by Christian and Susan Halby and is used for wildlife conservation.

\*\*\*\*\*

EXISTING SITE CO-1704 (Crosby Pond)

Location: On Mill Brook about 1,000 feet downstream from the Concord Turnpike (Route 2) in Concord, Massachusetts.

Concord, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
10	5	400	0.6

Potential for Expansion: Limited. A long dam would be required. Expansion would affect Cambridge Turnpike and the Concord Turnpike (Route 2).

Remarks: The dam is an earthfill structure. The concrete spillway is in poor condition. Trees are growing on the dam and leakage is apparent near the right abutment.



EXISTING SITE CO-1704 (Crosby Pond) (Continued)

Ownership      The pond is owned by John Crosby and is used for  
and              wildlife conservation and fishing.  
Use:

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EXISTING SITE CO-1705 (Fairylane Pond)

Location:      On an unnamed tributary to Mill Brook in the  
Hapgood Wright Town Forest in Concord, Massachusetts.

Concord, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
5	4	100	0.1

Potential      The small drainage area limits expansion potential.  
for  
Expansion:

Remarks:      The dam is an earthfill structure. The spillway is a  
concrete inlet with flashboards outletting to a 15-inch  
diameter concrete pipe.

Ownership      The site is owned by the town of Concord and is used  
and              for recreation as part of the town Forest.  
Use:

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EXISTING SITE CO-1706 (Hutchins Pond)

Location: On Saw Mill Brook about 1800 feet upstream from Monument Street in Concord, Massachusetts.

Concord, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Ft.)</u>
6	6	1150	1.8

Potential for Expansion: Raising the existing pond level by 15 feet would more than triple the surface area. No facilities would be affected by expansion.

Remarks: The dam is an earthfill structure. The spillway is a 7-foot wide concrete chute. Trees are growing on the dam.

Ownership and Use: The pond is owned by the town of Concord and is part of the Punkatasset Conservation Area.

\*\*\*\*\*

EXISTING SITE CO-1707 (Bates Pond)

Location: On Pages Brook about 2800 feet upstream from Brook Street in Carlisle, Massachusetts.

Billerica, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
2	8	650	1.0

Potential for Expansion: Limited. A large area of shallow water would be created by pond expansion. Sand and gravel in both abutments might cause excessive seepage losses.

Remarks: The dam is an earthfill structure. Two 24-inch pipes act as the spillway system. Brush is growing on the dam.

Ownership and Use: The pond is owned by Bates Farm and is used for wildlife conservation.

\*\*\*\*\*

EXISTING SITE CO-1708 (Winning Pond)

Location: On an unnamed tributary to the Concord River about 1600 feet downstream from Treble Cove Road in Billerica, Massachusetts.

Billerica, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
17	7	600	0.9

Potential for Expansion: Limited. The pond is surrounded by roads and houses. Gravel deposits in the right abutment might cause excessive seepage losses.

Remarks: The dam is an earthfill and stone structure. The spillway is a 4-foot wide weir.

Ownership and Use: The pond is owned by Middlesex County and is used for wildlife conservation.

\*\*\*\*\*

EXISTING SITE CO-1709 (Honeywell Pond)

Location: On Mill Brook about 150 feet upstream from Concord Road in Billerica, Massachusetts.

Billerica, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
2	15	800	1.3

Potential for Expansion: Limited. An office building is located at the edge of the pond. A large area of shallow water would be created by pond expansion.

Remarks: The dam is a newly reconstructed earthfill structure. The principal spillway is a 6-foot wide concrete weir. A 30-inch diameter concrete pipe equipped with a valve serves as a pond drain.



EXISTING SITE CO-1709 (Honeywell Pond) (Continued)

Ownership      The pond is owned by Honeywell Corporation and is used  
and  
Use:            for water supply and recreation.

\*\*\*\*\*

EXISTING SITE CO-1710 (Greenough Pond)

Location:      On Pages Brook about 1000 feet upstream from its con-  
fluence with the Concord River, near the Carlisle-  
Billerica town line in Carlisle, Massachusetts.

Billerica, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
15	7	3,350	5.3

Potential      Limited. Raising the existing water level by more than  
for  
Expansion:      6 feet would inundate 3 roads and many new houses. A  
large area of shallow water would be created by pond  
expansion.

Remarks:      The dam is an earthfill structure with a private drive-  
way across the top. The spillway system consists of  
two concrete weirs, 9 and 15 feet wide.

Ownership      The pond is owned by the Carlisle Conservation Commission  
and  
Use:            and is used for recreation.

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CO-1705 (Fairyland Pond)  
Dam and Spillway



CO-1708 (Winning Pond)  
Dam and Spillway Inlet



CO-1706 (Hutchins Pond)  
Chute Spillway



CO-1709 (Honeywell Pond)  
Spillway









# LEGEND

- WATERSHED BOUNDARY
- POTENTIAL SITE SHOWING BENEFICIAL POOL FOR LARGEST STRUCTURE  
1702
- DRAINAGE AREA ABOVE STRUCTURE
- EXISTING POND OR RESERVOIR  
1701



## CONCORD RIVER (CO-17)

CONCORD STUDY AREA  
MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES

UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE

Source—USGS. Quad Sheets  
Billerica, Mass.—1965  
Concord, Mass.—1958  
Lowell, Mass.—1966





## SUDBURY STUDY AREA

## SITE DATA FOR

## Subwatershed SU-16, Baiting Brook

This subwatershed covers about 2,300 acres in Framingham, Middlesex County.

The main stream in the subwatershed is Baiting Brook which originates in the northwestern section of Framingham and flows southeasterly to the Sudbury River downstream from Reservoir No. 1. Elevations in the subwatershed range from a high of 511 feet (msl) on Gibbs Mountain to about 160 feet at the Sudbury River.

One potential reservoir site and one existing reservoir were studied.

POTENTIAL SITE SU-1601

Location: On Baiting Brook about 600 feet upstream from the M.D.C. Weston Aqueduct in Framingham, Massachusetts.

Framingham, Mass. USGS quadrangle.

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Gas Pipeline	230

Remarks: This site has been proposed as a floodwater retarding reservoir in the Baiting Brook PL-566 Watershed Protection and Flood Prevention Project. The single purpose floodwater retarding dam is designed to store the sediment volume expected to accumulate over a 100-year period and will automatically regulate the runoff from a 100-year frequency storm. The 24-foot high dam will be constructed of compacted earthfill. The principal spillway will consist of a reinforced concrete riser and outlet conduit. The emergency spillway, excavated in earth on the right abutment will pass floodwaters in excess of the principal spillway design flood. The watershed plan and environmental assessment for the Baiting Brook Project is nearing completion.

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EXISTING SITE SU-1602 (Packard Pond)

Location: On Baiting Brook about 5,000 feet upstream from Belknap Road in Framingham, Massachusetts.

Framingham, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
4	20	850	1.3

Potential for Expansion: Raising the present pond level by 20 feet would create an 80-acre pool. Millwood Street would be affected.

Remarks: The dam is an earthfill structure with vertical stone facing on the downstream side. The spillway is a ten-foot wide stone weir and stone chute exit channel. Three gates control water levels in the pond.

Ownership and Use: The pond is owned by Sudbury Valley School Incorporated and is used for recreation.

\*\*\*\*\*



## SUDBURY STUDY AREA

## SITE DATA FOR

## Subwatershed SU-17, Sudbury River

The Sudbury River subwatershed covers about 102,500 acres in Ashland, Concord, Framingham, Holliston, Hopkinton, Hudson, Lincoln, Marlborough, Natick, Northborough, Sherborn, Southborough, Stow, Sudbury, Upton, Wayland, Westborough, and Weston. The subwatershed includes the drainage area of the Sudbury River with the exception of subwatershed SU-16, Baiting Brook.

The main stream in the subwatershed is the Sudbury River which originates in Cedar Swamp in Westborough. The river flows westerly and northwesterly through Hopkinton, Southborough, Ashland, Framingham, Wayland, Sudbury and Lincoln to Concord where it joins the Assabet River to form the Concord River. Elevations in the subwatershed range from nearly 600 feet (msl) in Hopkinton and Westborough to about 120 feet near the confluence with the Assabet River in Concord.

Nine potential sites and 28 existing sites were studied.

POTENTIAL SITE SU-1701

Location: On an unnamed tributary to the Sudbury River about 300 feet upstream from the Sudbury River in Lincoln, Massachusetts.

Concord, Mass. USGS quadrangle.

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	South Great Road	125
	House	135

Geologic Conditions: The right abutment is silty sand with gravel, cobbles, and boulders (englacial drift), shallow to bedrock. The left abutment is poorly graded sand and gravel (outwash). Depth to schist bedrock in the foundation is estimated to be 50 to 60 feet. Waterholding capabilities appear to be fair. Leakage is expected through the left abutment. Pervious borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location. See Existing Site SU-1701 for data on the pond at this site.

\*\*\*\*\*

POTENTIAL SITE SU-1702

Location: On an unnamed tributary to Hop Brook about 1100 feet upstream from the Sudbury-Marlborough boundary in Marlborough, Massachusetts.

Framingham, Mass. USGS quadrangle

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	16 houses	205
	Pipeline	210
	House	210
	Sudbury Street	210
	Road	210
	4 houses	215
	Barn	215
	2 houses	220

Geologic Conditions: Both abutments are outwash sand and gravel; possibly shallow to bedrock on the right abutment. Surficial materials are swamp deposits, outwash sand and gravel, and schist bedrock. Depth to schist bedrock in the foundation is estimated to be from 25 to 35 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Pervious borrow material for dam construction was located near the site. Impervious material was not located.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location.

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POTENTIAL SITE SU-1704

Location: On Pantry Brook about 200 feet upstream from Marlborough Road in Sudbury, Massachusetts.

Maynard Mass. USGS quadrangle.

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	Road	155
	2 houses	155
	2 houses	165
	Barn	165
	2 houses	170



POTENTIAL SITE SU-1704 (Continued)

Geologic Conditions: Both abutments are outwash sand and gravel. Surficial materials are swamp deposits and outwash sand and gravel. Depth to schist bedrock in the foundation is estimated to be from 25 to 35 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location.

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POTENTIAL SITE SU-1705

Location: On Hop Brook about 4,600 feet upstream from Dutton Road in Sudbury, Massachusetts.

Maynard, Mass. USGS quadrangle.

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	2 houses	165
	2 houses	170
	Railroad	170
	Dutton Road	170
	Gravel Road	170
	15 houses	175

Geologic Conditions: Both abutments are outwash sand and gravel. Surficial materials are swamp deposits and outwash sand and gravel. Depth to schist bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location.

Ownership and Use: A portion of the potential pool area is within the Natick Laboratories Military Reservation.

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POTENTIAL SITE SU-1706

Location: On Cold Spring Brook about 600 feet upstream from North Mill Street in Hopkinton, Massachusetts.

Holliston, Mass. USGS quadrangle.

<u>Facilities</u>	<u>Facility</u>	<u>Elevation</u>
Affected:	South Mill Street	265
	3 houses	265
	Barn and garage	265
	Ash Street	270
	Gravel Pits	270

Geologic Conditions: Both abutments are thin englacial drift with many bed-rock outcrops. Some sand and gravel is located near the toe of the abutments. Surficial materials are swamp deposits, outwash sand and gravel, and gneiss bedrock. Depth to granite bedrock in the foundation is estimated to be from 15 to 20 feet. Waterholding capabilities appear to be good with a cutoff through the sand and gravel at the toe of the abutments. Previous borrow material for dam construction was located near the site; impervious material was not located.

Engineering Notes: The right abutment is recommended as the excavated emergency spillway location. The spillway can be excavated in bedrock.

\*\*\*\*\*

POTENTIAL SITE SU-1709

Location: On an unnamed tributary to Indian Brook about 300 feet upstream from Wood Street (Route 135) in Hopkinton, Massachusetts.

Milford, Mass. USGS quadrangle.

<u>Facilities</u>	<u>Facility</u>	<u>Elevation</u>
Affected:	House	315
	House and barn	320
	Wood Street	320

POTENTIAL SITE SU-1709 (Continued)

Geologic Conditions: The left abutment is poorly graded sand and silty sand (englacial drift); shallow to bedrock. The right abutment is outwash sand and gravel with 5 to 10 feet of englacial drift higher on the slope. Surficial materials are swamp deposits, outwash sand and gravel, englacial drift, and granitic bedrock. Depth to granitic bedrock in the foundation is estimated to be from 5 to 10 feet. Waterholding capabilities appear to be fair. Seepage is expected in the foundation and the toe of both abutments unless a positive cutoff can be made. Borrow material for dam construction was located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location. The spillway can be excavated in bedrock.

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POTENTIAL SITE SU-1710

Location: On Hop Brook about 300 feet upstream from Peakham Road in Sudbury, Massachusetts.

Maynard, Mass. USGS quadrangle.

Facilities Affected:	<u>Facility</u>	<u>Elevation</u>
	Dutton Road	150
	29 houses	155
	Saxony Road	155
	10 houses	160
	3 roads	160

Geologic Conditions: Both abutments are outwash sand and gravel with some silty sand and gravel with cobbles and boulders. Surficial materials are swamp deposits, outwash sand and gravel, and englacial drift. Depth to schist bedrock in the foundation is estimated to be from 30 to 40 feet. Waterholding capabilities appear to be poor. Leakage is expected through both abutments and the foundation. Borrow material for dam construction was located near the site.

Engineering Notes: A concrete emergency spillway is recommended for this site.

\*\*\*\*\*



POTENTIAL SITE SU-1711

Location: On an unnamed tributary to the Sudbury River about 250 feet upstream from the Sudbury River in Hopkinton. The site is about 2000 feet southwest of the Southville section of Southborough, Massachusetts.

Marlboro, Mass. USGS quadrangle.

## Facilities

Affected: None below elevation 310.

Geologic Conditions: Both abutments are granite bedrock with a thin soil mantle. Surficial materials are swamp deposits, englacial drift and granite bedrock. Depth to granite bedrock in the foundation is estimated to be from 20 to 25 feet. Waterholding capabilities appear to be good. Borrow material for dam construction was not located near the site.

Engineering Notes: The left abutment is recommended as the excavated emergency spillway location. The spillway can be excavated in bedrock.

\*\*\*\*\*

POTENTIAL SITE SU-1713

Location: On Snake Brook about 2200 feet upstream from Locker Street School and 250 feet west of Rice Road in Wayland, Massachusetts.

Natick, Mass. USGS quadrangle.

Facilities	<u>Facility</u>	<u>Elevation</u>
Affected:	House	235

Geologic Conditions: The left abutment is granite bedrock. The right abutment is thin discontinuous deposits of silty sand underlain by granite bedrock. Surficial deposits are englacial drift and granite bedrock. Bedrock outcrops in the valley floor. Waterholding capabilities appear to be good. Borrow material for dam construction was located near the site.

POTENTIAL SITE SU-1713 (Continued)

Engineering Notes: The right abutment is recommended for the excavated emergency spillway location. The spillway can be excavated in bedrock. See Existing Site SU-1713 for data on the pond at the site.

Public Ownership: The site is owned by the Wayland Conservation Commission.

\*\*\*\*\*





# SUMMARY DATA FOR POTENTIAL UPSTREAM RESERVOIR SITES

STUDY AREA-SUBBURY  
BENEFICIAL POOL

SUBWATERSHED-SUBBURY

SITE RATING (2)	SITE RATING (1)	STUDY AREA-SUBBURY										SUBWATERSHED-SUBBURY										UAM	SAFE	YIELD
		BENEFICIAL POOL					EMERGENCY SPILLWAY					DESIGN					HIGH WATER							
STORAGE	STORAGE	PER	AREA	COST	DEPTH	AT	CREST	STORAGE	AT	CREST	PER	AC	FT	ELEV	AREA	TOP	ELEV	HGT	FILL	PERCENT	CHANCE			
(MSL)	AC FT	IN	(AC)	(AC)	(FT)	(FT)	(MSL)	AC FT	IN	(MSL)	AC FT	(MSL)	(AC)	(MSL)	(AC)	(MSL)	(AC)	(CY)	(CY)	(CY)	(CY)			
160.3	0	0.0	29	36380	61	59940	4.4	173.5	1704	4.1	2390	177.1	311	180.1	24	82	82	82	82	82	82			
162.6	100	0.2	61	9100	114	33710	10.3	162.6	162	0.4	22520	175.3	275	179.8	24	78	78	78	78	78	78			
166.3	422	1.0	114	3900	181	22960	14.7	166.3	484	1.2	7940	176.3	294	180.0	24	79	79	79	79	79	79			
170.7	1067	2.5	3900	218	20170	16.5	170.7	170.7	1129	2.7	3690	177.0	309	180.0	24	79	79	79	79	79	79			
172.5	1426	3.5	3080				172.5	172.5	1488	3.5	2950	177.3	317	180.3	24	93	93	93	93	93	93			

DA= 7.70 SQ MI = 4928 AC USGS QUAD- MAYNARD  
LATITUDE 42-22-48 LONGITUDE 71-17-46  
RUNOFF = 7.20 IN, PEAK FLOW = 243.4 CFS

SITE-SU-1705

SITE RATING (2)	SITE RATING (1)	STUDY AREA-SUBBURY										SUBWATERSHED-SUBBURY										UAM	SAFE	YIELD
		BENEFICIAL POOL					EMERGENCY SPILLWAY					DESIGN					HIGH WATER							
STORAGE	STORAGE	PER	AREA	COST	DEPTH	AT	CREST	STORAGE	AT	CREST	PER	AC	FT	ELEV	AREA	TOP	ELEV	HGT	FILL	PERCENT	CHANCE			
(MSL)	AC FT	IN	(AC)	(AC)	(FT)	(FT)	(MSL)	AC FT	IN	(MSL)	AC FT	(MSL)	(AC)	(MSL)	(AC)	(MSL)	(AC)	(CY)	(CY)	(CY)	(CY)			
160.3	0	0.0	29	36380	61	59940	4.4	173.5	1704	4.1	2390	177.1	311	180.1	24	82	82	82	82	82	82			
162.6	100	0.2	61	9100	114	33710	10.3	162.6	162	0.4	22520	175.3	275	179.8	24	78	78	78	78	78	78			
166.3	422	1.0	114	3900	181	22960	14.7	166.3	484	1.2	7940	176.3	294	180.0	24	79	79	79	79	79	79			
170.7	1067	2.5	3900	218	20170	16.5	170.7	170.7	1129	2.7	3690	177.0	309	180.0	24	79	79	79	79	79	79			
172.5	1426	3.5	3080				172.5	172.5	1488	3.5	2950	177.3	317	180.3	24	93	93	93	93	93	93			

DA= 4.80 SQ MI = 3072 AC USGS QUAD- HOLLISTON  
LATITUDE 42-13-00 LONGITUDE 71-18-53  
RUNOFF = 7.20 IN, PEAK FLOW = 131.4 CFS

SITE-SU-1706

SITE RATING (2)	SITE RATING (1)	STUDY AREA-SUBBURY										SUBWATERSHED-SUBBURY										UAM	SAFE	YIELD
		BENEFICIAL POOL					EMERGENCY SPILLWAY					DESIGN					HIGH WATER							
STORAGE	STORAGE	PER	AREA	COST	DEPTH	AT	CREST	STORAGE	AT	CREST	PER	AC	FT	ELEV	AREA	TOP	ELEV	HGT	FILL	PERCENT	CHANCE			
(MSL)	AC FT	IN	(AC)	(AC)	(FT)	(FT)	(MSL)	AC FT	IN	(MSL)	AC FT	(MSL)	(AC)	(MSL)	(AC)	(MSL)	(AC)	(CY)	(CY)	(CY)	(CY)			
160.3	0	0.0	29	36380	61	59940	4.4	173.5	1704	4.1	2390	177.1	311	180.1	24	82	82	82	82	82	82			
162.6	100	0.2	61	9100	114	33710	10.3	162.6	162	0.4	22520	175.3	275	179.8	24	78	78	78	78	78	78			
166.3	422	1.0	114	3900	181	22960	14.7	166.3	484	1.2	7940	176.3	294	180.0	24	79	79	79	79	79	79			
170.7	1067	2.5	3900	218	20170	16.5	170.7	170.7	1129	2.7	3690	177.0	309	180.0	24	79	79	79	79	79	79			
172.5	1426	3.5	3080				172.5	172.5	1488	3.5	2950	177.3	317	180.3	24	93	93	93	93	93	93			

DA= 0.80 SQ MI = 512 AC USGS QUAD- MILFORD  
LATITUDE 42-13-41 LONGITUDE 71-32-32  
RUNOFF = 7.20 IN, PEAK FLOW = 33.4 CFS

SITE-SU-1709

SITE RATING (2)	SITE RATING (1)	STUDY AREA-SUBBURY										SUBWATERSHED-SUBBURY										UAM	SAFE	YIELD
		BENEFICIAL POOL					EMERGENCY SPILLWAY					DESIGN					HIGH WATER							
STORAGE	STORAGE	PER	AREA	COST	DEPTH	AT	CREST	STORAGE	AT	CREST	PER	AC	FT	ELEV	AREA	TOP	ELEV	HGT	FILL	PERCENT	CHANCE			
(MSL)	AC FT	IN	(AC)	(AC)	(FT)	(FT)	(MSL)	AC FT	IN	(MSL)	AC FT	(MSL)	(AC)	(MSL)	(AC)	(MSL)	(AC)	(CY)	(CY)	(CY)	(CY)			
160.3	0	0.0	29	36380	61	59940	4.4	173.5	1704	4.1	2390	177.1	311	180.1	24	82	82	82	82	82	82			
162.6	100	0.2	61	9100	114	33710	10.3	162.6	162	0.4	22520	175.3	275	179.8	24	78	78	78	78	78	78			
166.3	422	1.0	114	3900	181	22960	14.7	166.3	484	1.2	7940	176.3	294	180.0	24	79	79	79	79	79	79			
170.7	1067	2.5	3900	218	20170	16.5	170.7	170.7	1129	2.7	3690	177.0	309	180.0	24	79	79	79	79	79	79			
172.5	1426	3.5	3080				172.5	172.5	1488	3.5	2950	177.3	317	180.3	24	93	93	93	93	93	93			

DA= 0.80 SQ MI = 512 AC USGS QUAD- MILFORD  
LATITUDE 42-13-41 LONGITUDE 71-32-32  
RUNOFF = 7.20 IN, PEAK FLOW = 33.4 CFS

SITE-SU-1709

NOTES - (1) COSTS ARE BASED ON 1975 S.C.S. DESIGN CRITERIA AND COST DATA.  
(2) EMERGENCY SPILLWAY STORAGE AND COSTS ARE BASED ON TOTAL STORAGE, INCLUDING BENEFICIAL POOL.  
(3) EMERGENCY SPILLWAY TYPE CODE- C=CONCRETE CHUTE, D=CONCRETE DROP, E=EXCAVATED, T=TWO SPILLWAYS, N=NON.  
(4) TABULAR DATA ARE BASED ON PRELIMINARY INFORMATION. FIGURES SHOWN ARE PRIMARILY FOR COMPARISON PURPOSES.  
(5) ELEVATIONS ARE SHOWN TO THE NEAREST 0.1 FOOT TO SHOW VARIATION BETWEEN DEVELOPMENTS ONLY, AND ARE NOT TO BE CONSIDERED ACCURATE TO THAT DEGREE.

\*\* DO NOT USE FOR FINAL SITE SELECTION OR LAND ACQUISITION. \*\*



EXISTING SITE SU-1701 (Farrar Pond)

Location: On an unnamed tributary to the Sudbury River about 300 feet upstream from the Sudbury River in Lincoln, Massachusetts.

Concord, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
126	7	1,408	2.2

Potential  
for

Expansion: See Potential Site SU-1701 for details.

Remarks: The dam is an earthfill structure with a placed-stone broad-crested weir spillway about 30 feet long, 8 feet wide, and 3 feet deep.

Ownership  
and  
Use:

The pond is owned by Gordon Winchell and is used for recreation and wildlife.

\*\*\*\*\*

EXISTING SITE SU-1713 (Old Wayland Reservoir)

Location: On Snake Brook about 2200 feet upstream from Locker Street School and 250 feet west of Rice Road in Wayland, Massachusetts.

Natick, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
10	10	500	0.8

Potential  
for

Expansion: See Potential Site SU-1713.

Remarks: The dam is an earthfill structure with a rock spillway located on the right abutment. A pumphouse is located at the downstream center of the dam.

Ownership  
and  
Use:

The reservoir is owned by the Wayland Conservation Commission and is used for recreation.

\*\*\*\*\*



EXISTING SITE SU-1714 (Ice House Pond)

Location: On Indian Brook about 1700 feet upstream from Wood Street in Hopkinton, Massachusetts.

Milford, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
4	5	500	0.8

Potential for Expansion: Raising the present pond level by five feet would create a 25-acre pool. West Main Street and 2 houses would be affected.

Remarks: The dam is an earthfill structure. There is also a dike located on the east edge of the pond. The spillway is a 14-foot long concrete weir with a 3-foot notch to carry normal flows. Concrete in the spillway is badly deteriorated and the earthfill has been breached.

Ownership and Use: The pond is owned by the town of Hopkinton and is used for conservation.

\*\*\*\*\*

EXISTING SITE SU-1715 (Duck Pond)

Location: On an unnamed tributary to Indian Brook about 1000 feet east of Saddle Hill Road in Hopkinton, Massachusetts.

Milford, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
5	10	100	0.2

Potential for Expansion: The small drainage area limits expansion potential.

Remarks: The dam is an earthfill structure with a gated, concrete box inlet spillway. Water outlets through a cast iron pipe under a woods road and into a constructed channel to Hopkinton Reservoir.

Ownership and Use: The pond is owned by the Massachusetts Division of Forests and Parks and is used for recreation.

\*\*\*\*\*

EXISTING SITE SU-1716 (Bloods Pond)

Location: On Cold Spring Brook at South Mill Street in Hopkinton, Massachusetts.

Holliston, Mass. USGS quadrangle.

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres) (Sq. Mi.)</u>
9	10	2400 3.8

Potential for Expansion: Limited. A dam nearly 5000 feet long would be required. Large areas of shallow water would be created.

Remarks: The South Mill Road highway embankment forms the dam. The principal spillway is a 12-foot wide concrete weir with a box culvert under South Mill Road. A twin sluiceway is located at the left abutment near stonework of an old mill building.

Ownership and Use: The pond is owned by Amado Picardi and is used for recreation and wildlife.

\*\*\*\*\*

EXISTING SITE SU-1717 (Hopkinton Reservoir)

Location: On Indian Brook about 1900 feet upstream from Howe Street in Ashland, Massachusetts.

Marlborough, Mass. USGS quadrangle

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres) (Sq. Mi.)</u>
190	60	4050 6.3

Potential for Expansion: Steep topography limits any significant increase in surface area except at the upstream end of the reservoir.

Remarks: The dam is an earthfill structure. The upstream slope is riprapped. The spillway is a large capacity, stonework weir with a stepped outlet channel. The spillway is 30 feet wide.

Ownership and Use: The reservoir is owned by the Massachusetts Division of Forests and Parks and is used for recreation.

\*\*\*\*\*

EXISTING SITE SU-1718

Location: On an unnamed tributary to Indian Brook about 400 feet south of the Hopkinton - Ashland town line and 400 feet west of Cross Street in Hopkinton, Massachusetts.

Holliston, Mass. USGS quadrangle.

<u>Surface Areas</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	(Sq. Mi.)
5	10	125	0.20

Potential for Expansion: The small drainage area limits expansion potential.

Remarks: The dam is an earthfill structure. The spillway is a 6' x 6' concrete box riser with a two-foot wide notched weir and an 18-inch corrugated metal pipe conduit. Seepage was noted at several locations along the dam.

Ownership and Use: The pond is owned by Liberty Mutual Research Center and is used for recreation and wildlife.

\*\*\*\*\*

EXISTING SITE SU-1719 (Ashland Reservoir)

Location: On Cold Spring Brook about 2500 feet upstream from Main Street in Ashland, Massachusetts.

Holliston, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	(Sq. Mi.)
164	60	4500	7.0

Potential for Expansion: Raising the present pool level by 30 feet would nearly double the surface area. Three streets and four houses would be affected.

Remarks: The dam is an earthfill structure. The spillway, located on the left abutment is a 30-foot wide stone weir with a placed-stone exit channel.

Ownership and Use: The reservoir is owned by the Massachusetts Department of Forests and Parks and is used for recreation.

\*\*\*\*\*



EXISTING SITE SU-1720 (Sudbury Reservoir)

Location: On Stony Brook about 1200 feet upstream from the Southborough - Framingham town line in Southborough, Massachusetts.

Framingham and Marlborough, Mass. USGS quadrangles.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
1300	65	14,400	22.5

Potential for Expansion: Limited by development at the northern end of the reservoir.

Remarks: The dam is an earthfill structure with a granite block, ogee spillway. The spillway is 300 feet wide and has provision for flashboards. The dam also has a power house with generators. Dam and spillway are well-maintained.

Ownership and Use: The reservoir is owned by the Metropolitan District Commission and is used for municipal water supply.

\*\*\*\*\*

EXISTING SITE SU-1721 (Reservoir No. 2)

Location: On the Sudbury River between Winter Street and Fountain Street in Framingham, Massachusetts.

Framingham, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>Sq. Mi.)</u>
125	15	29,300	45.8

Potential for Expansion: Limited by urban development surrounding the reservoir.

Remarks: The dam is an earthfill structure with a 184-foot wide spillway weir. There are also four gated outlets which regulate flow. The dam and spillway are well-maintained.

Ownership and Use: The reservoir is owned by the Metropolitan District Commission and is used as an emergency municipal water supply.

\*\*\*\*\*

EXISTING SITE SU-1722 (Reservoir No. 1)

Location: On the Sudbury River about 100 feet upstream from Winter Street in Framingham, Massachusetts.

Framingham, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	(Sq. Mi.)
160	10	48,500	75.8

Potential for Expansion: Limited by urban development surrounding the reservoir.

Remarks: The dam is an earthfill structure with a 168-foot wide spillway weir. There are also four gated outlets which regulate flow. The dam and spillway are well-maintained.

Ownership and Use: The reservoir is owned by the Metropolitan District Commission and is used as an emergency municipal water supply.

\*\*\*\*\*

EXISTING SITE SU-1723 (Reservoir No. 3)

Location: On Stony Brook about 400 feet upstream from Mass. Route 9 in Framingham, Massachusetts.

Framingham, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	(Sq. Mi.)
240	20	17,900	27.9

Potential for Expansion: Limited by development surrounding the reservoir.

Remarks: The dam is an earthfill structure with a granite block, weir spillway. The spillway is 100 feet wide. There are also four gated outlets which regulate flow. The dam and spillway are well-maintained.

Ownership and Use: The reservoir is owned by the Metropolitan District Commission and is used for municipal water supply.

\*\*\*\*\*

## EXISTING SITE SU-1724 (Parmenter Pond)

Location: On an unnamed tributary to Angelica Brook about 1300 feet upstream from Parmenter Road in Marlborough, Massachusetts. Half of the pond area is in Framingham.

Framingham, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
8	4	100	0.2

Potential for Expansion: The small drainage area limits expansion potential.

Remarks: The dam is an earthfill structure. A concrete slab serves as the spillway. The dam is leaking.

Ownership and Use: The pond is owned by Charles Beebe and is used for wildlife.

\*\*\*\*\*

EXISTING SITE SU-1725 (Gristmill Pond)

Location: On Hop Brook about 300 feet upstream from Route 20 in Sudbury, Massachusetts.

Framingham, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
17	20	1,450	2.3

Potential for Expansion: Raising the present pool level by 10 feet would more than double the surface area. Six houses and three roads would be affected. An historic gristmill is located downstream

Remarks: The dam is an earthfill structure with a vertical, stone wall on the downstream face. There is a ten-foot wide spillway with a sluiceway to the old gristmill. Some seepage was noted at the original streambed.

Ownership and Use: The pond is owned by Wayside Inn, Inc. and is used for recreation.

\*\*\*\*\*



EXISTING SITE SU-1726 (Hager Pond)

Location: On Hop Brook about 300 feet upstream of Route 20 in Marlborough, Massachusetts.

Framingham, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
25	12	750	1.2

Potential for Expansion: Raising the present pool level by 10 feet would nearly double the surface area. Three houses and Route 20 would be affected. The pond is located immediately downstream of the Marlborough Sewage Disposal Plant.

Remarks: The dam is an earthfill structure. The spillway is a concrete weir with three feet of stop logs. The spillway is five feet wide. Trees are growing on the dam and leakage was noted.

Ownership and Use: The pond is owned by Wayside Inn, Inc. and is used for wildlife.

Use:

\*\*\*\*\*

EXISTING SITE SU-1727 (Marlborough Brook Pond)

Location: On Marlborough Brook near the MDC Filtration beds in Marlborough, Mass.

Marlborough, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
3	15	1050	1.6

Potential for

Expansion: Limited by development located immediately upstream.

Remarks: The dam is an earthfill structure. The principal spillway is an eight-foot wide weir. The emergency spillway is a 30-foot wide ogee section located at the left abutment. It appears that large amounts of sediment have been deposited in the pond.

Ownership and Use: The pond is owned by the Metropolitan District Commission and is used in connection with the filtration beds.

Use:

\*\*\*\*\*

EXISTING SITE SU-1728 (Crystal Pond)

Location: On an unnamed tributary to the Sudbury River about 1600 feet south of Route 9 in Southborough, Massachusetts.

Marlborough, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>Sq. Mi.)</u>
2	15	75	0.1

Potential  
for

Expansion: The small drainage area limits expansion potential.

Remarks: The dam is an earthfill structure. The spillway is a two-stage system consisting of a conduit and a concrete chute overflow. The dam and spillway are in good condition.

Ownership and Use: The pond is owned by a development corporation and is used for floodwater storage and aesthetics.

\*\*\*\*\*

EXISTING SITE SU-1729 (Westborough Reservoir)

Location: On Piccadilly Brook about 900 feet upstream from Upton Road in Westborough, Massachusetts.

Milford, Mass. USGS quadrangle

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
68	15	850	1.5

Potential for Expansion: Storage volume could be increased. A much longer dam would be needed. Two roads and the Massachusetts Turnpike would be affected.

Remarks: The dam is an earthfill structure. The spillway is a concrete overflow section with flashboards. Trees are growing on the dam. Seepage was noted near the left abutment.

Ownership and Use: The reservoir is owned by the town of Westborough and is used for municipal water supply.

\*\*\*\*\*

EXISTING SITE SU-1730 (Whitehall Reservoir)

Location: On Whitehall Brook about 800 feet upstream from Wood Street (Route 135) in Hopkinton, Massachusetts.

Milford, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
620	12	2,900	4.5

Potential for Expansion: Steep topography limits any significant increase in surface area. The reservoir surface area is already large in relation to the drainage area size.

Remarks: The dam is an earthfill structure with a concrete core wall on the upstream face. A control building with gated outlets serves as the spillway. Gravel fill has been placed across the pond about 200 feet upstream from the dam with provision for stop logs to control water level.

Ownership and Use: The reservoir is owned by the Massachusetts Division of Forests and Parks and is used for recreation.

\*\*\*\*\*

EXISTING SITE SU-1731 (Dudley Pond)

Location: On an unnamed tributary to the Sudbury River directly upstream from the Hultman Aqueduct in Wayland, Massachusetts.

Natick, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
84	7	400	0.6

Potential for Expansion: Limited. The pond is surrounded by development. The surface area is already large in relation to the size of the drainage area.

Remarks: The dam is an earthfill structure. The spillway is a combined circular weir and culvert. The circular weir has a length of 12 feet with a 4-foot notch for normal flows. A tapered inlet downstream of the weir directs flow to a culvert under the Hultman Aqueduct.



EXISTING SITE SU-1731 (Dudley Pond) (Continued)

Ownership      The pond is owned by the Metropolitan District Commis-  
and              sion and is used for recreation.  
Use:

\*\*\*\*\*

EXISTING SITE SU-1732 (Mill Pond)

Location:      On Mill Brook about 750 feet upstream from the Boston  
and Maine Railroad at Wayland Center in Wayland, Massa-  
chusetts.

Natick, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)    (Sq. Mi.)
5	4	750          1.2

Potential      Limited. Raising the present pool level by 5 feet would  
for              affect 3 streets and 5 houses. A large area of shallow  
Expansion:      water would be created.

Remarks:      The dam is an earthfill structure with a concrete, drop  
spillway at the center. A four-foot wide notch acts  
as a principal spillway. The dam was recently cleared  
and widened in a rehabilitation project.

Ownership      The pond is owned by the town of Wayland and is used  
and              for conservation and recreation.  
Use:

\*\*\*\*\*

EXISTING SITE SU-1733

Location: On Hazel Brook about 400 feet upstream from Draper Road in Wayland, Massachusetts.

Concord, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
2	6	350	0.5

Potential for Expansion: Raising the pool level by 5 feet would increase the surface area by more than 5 times. No facilities would be affected.

Remarks: The dam is an earthfill structure. The spillway is a 3-foot diameter corrugated metal conduit with a 5-foot diameter, half-round metal riser. An emergency spillway is located on the left abutment.

Ownership and Use: The pond is owned by the Massachusetts Audubon Society and is used for wildlife habitat.

\*\*\*\*\*

EXISTING SITE SU-1734 (Schoolhouse Pond)

Location: On Hazel Brook about 900 feet southwest of the Sherman Bridge Road - Concord Road intersection in Wayland, Massachusetts.

Concord, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
6	6	750	1.2

Potential for Expansion: Raising the pool level by 5 feet would nearly double the surface area. Concord Road would be affected.

Remarks: The dam is an earthfill structure with a treated timber wall on the downstream face. The timber section has a 10-foot wide weir which serves as the principal spillway. The entire timber wall acts as an emergency spillway.

EXISTING SITE SU-1734 (Schoolhouse Pond) (Continued)

Ownership      The pond is owned by Bruce Montgomery and is used for  
and              recreation and wildlife.

Use:

\*\*\*\*\*

EXISTING SITE SU-1735 (South Great Road Pond)

Location:      On an unnamed tributary to Farrar Pond about 100 feet  
                  upstream from South Great Road in Lincoln, Massachusetts.

Concord, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
5	8	750	1.2

Potential      Topography limits any significant increase in surface  
for              area.  
Expansion:

Remarks:      The dam is an earthfill structure. The spillway is a  
                  corrugated metal drop structure with a 24-inch diameter  
                  conduit.

Ownership      The pond is owned by the town of Lincoln and is used  
and              for wildlife habitat.

Use:

\*\*\*\*\*



EXISTING SITE SU-1736 (Willis Pond)

Location: On Run Brook about 1000 feet upstream from Fairbanks Road in Sudbury, Massachusetts.

Maynard, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
63	2	700	1.1

Potential for Expansion: Limited. A large area of shallow water would be created. Three auxiliary dikes would be required. The pond area is already large in relation to the size of the drainage area.

Remarks: A private driveway forms the dam. The spillway is a 24-inch diameter pipe.

Ownership and Use: The pond is owned by Frank Cutting and is used for wildlife.

\*\*\*\*\*

EXISTING SITE SU-1737 (Stearns Mill Pond)

Location: On Hop Brook about 100 feet upstream from Dutton Road in Sudbury, Massachusetts.

Maynard, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
17	8	5,500	8.6

Potential for Expansion: Raising the present pond level by 5 feet would nearly double the surface area. Dutton Road and a railroad would be affected.

Remarks: The dam is an earthfill structure with a concrete core wall. The spillway is two concrete weir sections each about 12 feet wide. A gated outlet is used to drain the pond. There is an old mill foundation on the left abutment. Trees and brush are growing on the dam.

EXISTING SITE SU-1737 (Stearns Mill Pond) (Continued)

Ownership      The pond is owned by William L. Smith and is used for  
and              wildlife habitat.  
Use:

\*\*\*\*\*

EXISTING SITE SU-1738 (Carding Mill Pond)

Location:      On Hop Brook about 1100 feet upstream from French Road  
in Sudbury, Massachusetts.

Framingham, Mass. USGS quadrangle.

<u>Surface Area</u> <u>(Acres)</u>	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> <u>(Acres)</u>	<u>(Sq. Mi.)</u>
37	15	2,150	3.4

Potential      Raising the present pond level by 5 feet would nearly  
for              double the surface area. The Old Boston Post Road  
Expansion:      and the Wayside Inn would be affected.

Remarks:      The dam is an earthfill and rock structure with two  
10-foot wide field stone conduits serving as the spill-  
way system.

Ownership      The pond is owned by Arden McNeil and is used for  
and              recreation and wildlife.  
Use:

\*\*\*\*\*

EXISTING SITE SU-1739 (Lake Cochituate & Fisk Pond)

Location: On an unnamed tributary to the Sudbury River near Interchange 13 of the Massachusetts Turnpike in Framingham, Massachusetts. The major portion of the lake is located in Natick and a portion is located in Wayland

Framingham, Mass. USGS quadrangle.

<u>Surface Area</u> (Acres)	<u>Height of</u> <u>Dam (Ft.)</u>	<u>Drainage Area</u> (Acres)	<u>(Sq. Mi.)</u>
594	10	6,500	10.2

Potential for Expansion: Limited. The lake is surrounded by development. The Massachusetts Turnpike, Mass. Route 9, and the Penn Central Railroad cross the lake. The lake is already large in relation to the size of its drainage area.

Remarks: The dam is an earthfill structure with a granite block spillway. A 5-foot wide weir carries normal flows. Large flows are carried by a 65-foot long drop spillway equipped with stop logs. A second weir located downstream controls tailwater elevations. Fisk Pond is a section of Lake Cochituate separated from the main body of water by Route 130 and the Penn Central Railroad.

Ownership and Use: The lake and Fisk Pond are owned by the Massachusetts Division of Forests and Parks and are used for recreation.

\*\*\*\*\*





SU-1701 (Farrar Pond)  
Spillway



SU-1714 (Ice House Pond)  
Dam and Spillway



SU-1713 (Old Wayland Reservoir)  
Dam



SU-1715 (Duck Pond)  
Spillway Outlet







SU-1717 (Hopkinton Reservoir)  
Spillway Outlet Channel



SU-1725 (Gristmill Pond)  
Sluiceway Outlet and Waterwheel



SU-1719 (Ashland Reservoir)  
Dam and Gatehouse



SU-1726 (Hager Pond)  
Spillway Outlet









SU-1727 (Marlborough Brook Pond)  
Dam and Spillways



SU-1730 (Whitehall Reservoir)  
Dam, Gatehouse, and Gravel Fill



SU-1729 (Westborough Reservoir)  
Dam and Gatehouse



SU-1732 (Mill Pond)  
Dam and Spillway

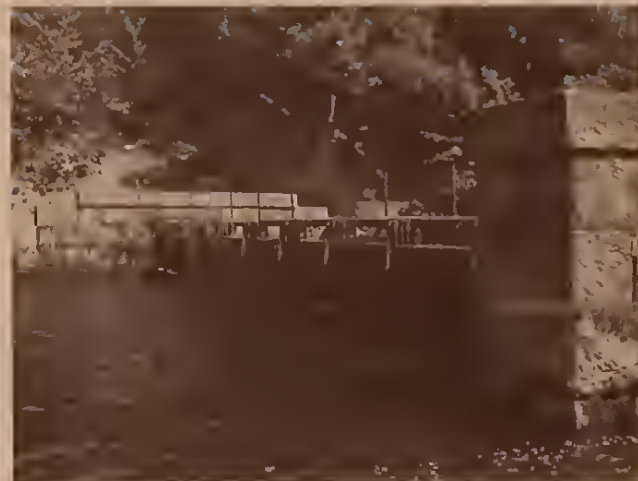








SU-1737 (Stearns Mill Pond)  
Spillway Outlet



SU-1739 (Lake Cochituate)  
Principal Spillway



SU-1738 (Carding Mill Pond)  
Pond, Dam and Mill



SU-1739 (Fish Pond)  
Speen Street Culvert

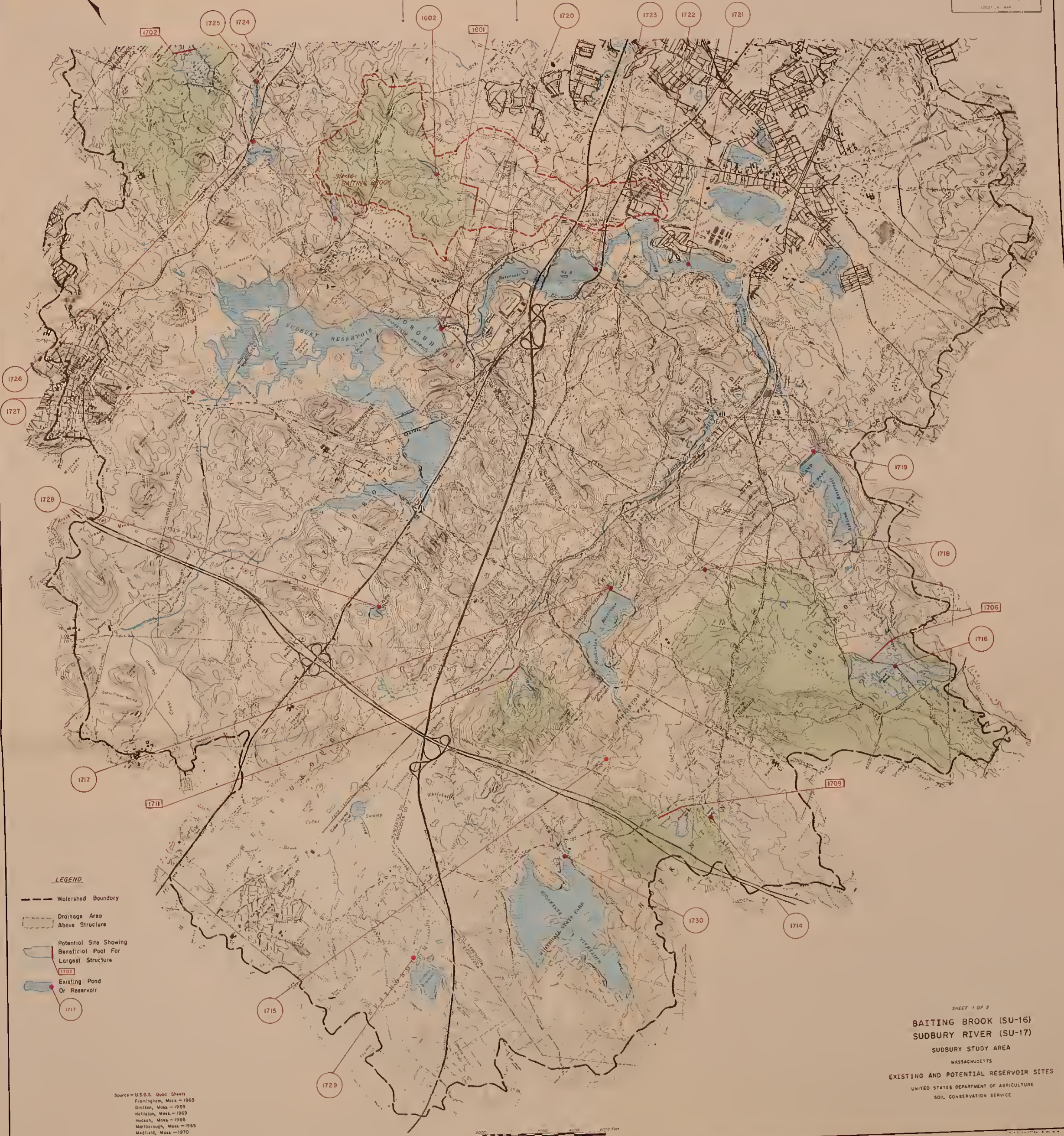








MATCH TO SHEET 2 OF 2



LEGEND

- Watershed Boundary
- Drainage Area Above Structure
- Potential Site Showing Beneficial Pool For Largest Structure
- Existing Pond Or Reservoir

Source - U.S.G.S. Quad Sheets  
Framingham, Mass. - 1965  
Grafton, Mass. - 1969  
Holliston, Mass. - 1969  
Hudson, Mass. - 1968  
Marlborough, Mass. - 1965  
Medford, Mass. - 1970  
Milford, Mass. - 1968  
Shrewsbury, Mass. - 1969

SHEET 1 OF 2  
BAITING BROOK (SU-16)  
SUDBURY RIVER (SU-17)  
SUDBURY STUDY AREA  
MASSACHUSETTS  
EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE









# LEGEND

WATERSHED BOUNDARY

DRAINAGE AREA  
ABOVE STRUCTURE

EXISTING POND  
OR RESERVOIR

1737

POTENTIAL SITE SHOWING  
BENEFICIAL POOL FOR  
LARGEST STRUCTURE

1710

SOURCE—U.S.G.S QUAD SHEETS  
Concord, Mass.—1970  
Framingham, Mass.—1965  
Marlborough, Mass.—1969  
Maynard, Mass.—1965  
Natick, Mass.—1970

MATCH TO SHEET 1 OF 2

4000 2000 0 2000 4000 6000 FEET

(SHEET 2 OF 2)

SUDBURY RIVER (SU-17)  
SUDBURY STUDY AREA

MASSACHUSETTS

EXISTING AND POTENTIAL RESERVOIR SITES  
UNITED STATES DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE







## MUNICIPAL INDEX OF RESERVOIR SITE INFORMATION

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	AS-1756	41	
	AS-1757	41	
Ashland	SU-1717	71	
	SU-1719	72	
Bedford	CO-1701	49	51
Berlin	AS-1734	28	
	AS-1735	28	
	AS-1740	31	
	AS-1741	32	
Billerica	CO-1701	49	51
	CO-1708	55	
	CO-1709	55	
Bolton	AS-1715	13	19
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	AS-1739	31	
	AS-1763	45	
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Boxborough	AS-1760	43	
Boylston	AS-1710	12	18
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Carlisle	AS-1758	42	
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Grafton	AS-1701	10	17
	AS-1704	11	18

## MUNICIPAL INDEX OF RESERVOIR SITE INFORMATION

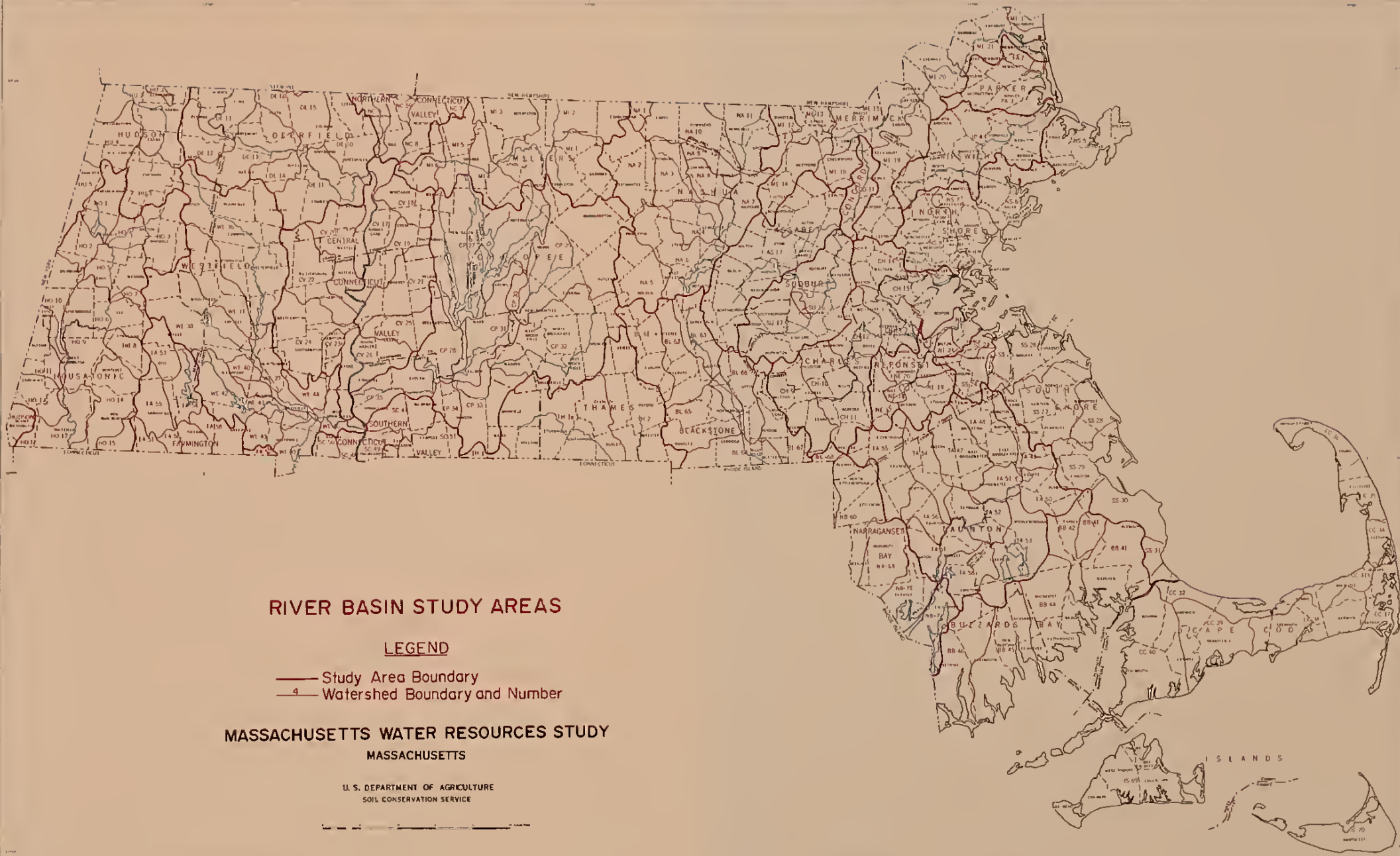
<u>City or Town</u>	<u>Site No.</u>	<u>Narrative Information Page</u>	<u>Design Summary Page</u>
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Southborough			

## MUNICIPAL INDEX OF RESERVOIR SITE INFORMATION

<u>City or Town</u>	<u>Site No.</u>	<u>Narrative</u> <u>Information</u>	<u>Design</u> <u>Summary</u>
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	AS-1704	11	18
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Westford	AS-1720	15	20







**RIVER BASIN STUDY AREAS**

**LEGEND**

- Study Area Boundary
- - - Watershed Boundary and Number

**MASSACHUSETTS WATER RESOURCES STUDY**

MASSACHUSETTS

U. S. DEPARTMENT OF AGRICULTURE  
SOIL CONSERVATION SERVICE



Map scale: 1 inch = 10 miles. 1:625,000. Date: 1964. This map was prepared by the Soil Conservation Service, U.S. Department of Agriculture, in cooperation with the Massachusetts Department of Environmental Affairs. It is a reproduction of a map published by the Soil Conservation Service, U.S. Department of Agriculture, in 1964.





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